REPORT RESUMES

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PEER ACCEPTANCE-REJECTION AND PERSONALITY DEVELOPMENT.

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THIS REPORT PRESENTS THE RESULTS OF A 5-YEAR RESEARCH PROGRAM WHICH ANALYZED MANY OF THE CORRELATES OF PEER ACCEPTANCE-REJECTION IN A SERIES OF STUDIES INVOLVING 37,913 SCHOOL CHILDREN, AGES 9 TO 12 YEARS. PEER ACCEPTANCE-REJECTION WAS INVESTIGATED THROUGH THE USE OF A PEER RATING SCALE AND A TEACHER RATING SCALE. A NUMBER OF METHODOLOGICAL STUDIES ON RELIABILITY AND STABILITY OF THE PEER STATUS AND TEACHER RATING SCORES AND INTERCORRELATIONS AMONG THESE SCORES ARE REPORTED. THE INFLUENCE OF FAMILY BACKGROUND ON PEER ACCEPTANCE-REJECTION IS SIGNIFICANTLY DEMONSTRATED IN DIFFERENT STUDIES INCLUDED IN THE REPORT. PEER REJECTION IS ALSO SIGNIFICANTLY RELATED TO CRITERIA OF EARLY DELINQUENCY AND EARLY SCHOOL DROPOUT IN TWO FOLLOWUP STUDIES. AS THE REPORT DEMONSTRATES THE IMPORTANCE OF PEER STATUS UPON SOCIALIZATION AND PERSONALITY DEVELOPMENT, IT SUGGESTS FURTHER STUDY ON MEASURES DESIGNED TO ATTACK CAUSES OF THE PROBLEMS. GENERALLY, PARENT EDUCATION AND THE ERADICATION OF POVERTY WITH ITS ASSOCIATED SOCIAL ILLS APPEAR TO BE THE MAJOR MODES OF INTERVENTION. (NS)

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FINAL REPORT

Project No. OE 5-0417
Contract No. OE 2-10-051

PEER ACCEPTANCE-REJECTION AND PERSONALITY DEVELOPMENT

Final report of a five-year research program, including studies of the origins of acceptance-rejection, effects on early delinquency and school dropout, and developmental dynamics.

January, 1967

U. S. Department of
Health, Education, and Welfare

Office of Education
Bureau of Research

CG 000 225

PEER ACCEPTANCE-REJECTION AND PERSONALITY DEVELOPMENT

Project No. OE 5-0417
Contract No. OE 2-10-051

S. B. Sells, Ph.D. and Merrill Roff, Ph.D.

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January, 1967

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CHAPTER I.

INTRODUCTION

I. INTRODUCTION

This programmatic, five-year study of the antecedent and subsequent correlates of peer acceptance-rejection in childhood was motivated by earlier research which presented substantial evidence imputing the strategic significance of peer relations in the processes of child development. In view of the importance attached to early recognition of potentially maladjusted youth, the linkage of peer rejection in the elementary school period with several criteria of young adult maladjustment, in Roff's large-scale longitudinal studies (Roff, 1956, 1957, 1960, 1961a, 1963a) focused attention on early peer relations. However, identification of cases is of limited value without understanding of their etiology and without access to modes of intervention for prevention or correction of the predicted outcomes. The present investigation involved a search for factors leading to peer rejection and the uncovering of processes associated with peer acceptance and rejection that influence the developing personality.

It may be noted that peer rejection, in Roff's pioneering studies, was obtained from the notes of psychiatrists, psychologists, social workers, and teachers, retained in the files of child guidance clinics, which were completed up to

Texas and Minnesota. Both the large sample and this replication procedure enabled far more accurate assessment of variability among subsamples than is customarily possible in academic studies, while at the same time exploiting the capability of the modern computer for high-speed, efficient, and economical data processing. The possibility of immediate cross-validation enabled evaluation of results without the delays commonly observed in the literature. As a consequence, the data reported in the following pages, which provide new insights concerning personality and social development and child rearing concepts, are greatly enhanced in credibility and generalizability.

This report is properly dedicated to the school board members, administrators, supervisors, and teachers whose generous cooperation and courageous commitment made it possible. The study was carried out during a period in which widespread official and public disapproval was expressed toward psychological testing, "social research," and other procedures involving alleged invasion of privacy. Peer choices, such as those employed in this research, were in many cases singled out by hostile critics. It is perhaps a tribute to the aims and procedures employed, as well as to the judgment of the school people who helped carry it through, that the work received constant and loyal support, in many cases in the face of threatening criticism.

Whether or not the knowledge gained justifies the risks taken will be determined by those who read and evaluate the separate papers and this general report. The confidence of the school personnel, families, and children who participated, in the procedures for maintaining the anonymity of the results and in the integrity of the investigators was a trust that was accepted gravely and responsibly. The record of the project shows that the bargain has been kept. Perhaps this experience can contribute something to the resolution of the dilemma which must be faced: how to study significant human problems without violating the privacy of those from whom critical information must be obtained. The inquiry was stripped to the minimum essential information required and the data were treated statistically by automatic equipment in which identities were concealed behind identification numbers filed in the offices of the project directors. Policies followed throughout the study treated these lists as confidential and not for release to unauthorized personnel.

CHAPTER II.

PLAN OF THE INVESTIGATION

II. PLAN OF THE INVESTIGATION

OBJECTIVES

One of the major objectives of this investigation was the verification of Roff's findings on peer rejection in a design that would additionally permit analysis of antecedent correlates of rejection, of effects on the individual, and provide insight into important developmental and behavioral processes involved.

The decision to undertake a new study of a contemporary sample was based on two considerations, mentioned above. First, although qualitatively informative as to the manner in which children designated here as "rejected" were perceived by peers, namely, as "nasty, mean, and antagonizing," the information obtained from clinic files was difficult to quantify on a scale of degree of rejection and did not cover the full range of the continuum of acceptance-rejection desired in correlational analysis. Second, Roff's samples could be considered atypical in relation to selection (clinic referrals) and not necessarily representative of the full range of the population. In addition, Roff's studies, using adult criterion information from military agencies, were confined to boys, and the general applicability of the hypothesis required inclusion of girls as well.

In the context of the present study it was desired to obtain a suitable measure of peer acceptance-rejection and to apply this to a broad sample of elementary school children in the United States for which access to correlative information would be available. The selection of school organizations, discussed below, was made with this need as one criterion. Using this means of identifying peer-rejected children in samples in which each child could be located on an acceptance-rejection continuum, it would be possible to correlate measures of peer status with other variables hypothesized to be significantly related.

As mentioned above, the simultaneous replication design was a second major, although methodological objective. In view of the assumed importance of the problem, with the possibilities of making a significant contribution relevant to the understanding of personality development, child rearing practices, parent education, school dropouts, delinquency, and mental health, some lessons of the past were heeded. First, samples of sufficient size were planned to assure adequate numbers when analyzed by grade, sex, socioeconomic level, ethnic group, and other relevant bases of classification and to evaluate sampling fluctuations among subgroups. And second, assuming that true cross-validation requires a completely new and independent sample, exposed to factors different from those of the initial sample on which initial results were found, rather than additional cases drawn essentially from the same original sample source, the choice of two widely separated geographic areas, differing in ethnic, social, and cultural backgrounds, was indicated. We have found no large-scale studies of this kind which have applied the same procedures to samples from differently constituted populations. Finally, in order to avoid the difficulties and delays of adequate replication, which is rarely found in the literature, the simultaneous program in the two selected areas assured the goals desired without loss of valuable time.

Research Questions

The specific research questions to which answers were sought in this study were as follows:

1. What is the optimal method of assessment of peer acceptance-rejection in a large public school sample, with appropriate consideration of validity, reliability, effects on individual children, public policy regarding invasion of privacy and related issues, and efficient, economical, and high speed analysis of data? There is a substantial literature bearing on some of these problems, originally under the heading of peer choices (Almack, 1922; Koch, 1933; Maller, 1929; Williams, 1923), later under the heading of sociometric status (Bonney, 1947; Gronlund, 1959; Lindzey

and Borgatta, 1954; Moreno, 1934; 1943; Mouton, Blake and Fruchter, 1955a; 1955b) and still later under the heading of peer choices or nominations again (Coleman, 1961; Hollander and Webb, 1955; Hollander, 1964; Newcomb, 1961; Thompson and Powell, 1951).

2. What is the incidence of markedly antagonizing behavior and peer rejection in the school population?

3. What factors in the backgrounds and life situations of individual children are associated with peer acceptance and rejection and account for significant variance in peer status measures? The literature includes several references to socioeconomic status (Brown, 1955; Cannon, 1957; Dahlke, 1953; Grossman and Wrighter, 1948; Loomis and Proctor, 1950; Neugarten, 1946) and a few on the subject of actual family situations, including birth order and/or number of siblings (Hardy, 1937; Koch, 1956; Thorpe, 1955) and marital stability or attitudes of the parents (Elkins, 1958; Winder and Rau, 1962).

4. What is the relation of peer rejection to subsequent indices of maladjustment, such as school dropout, delinquency, employment maladjustment, and mental illness? Again, there is relatively little information relating peer group status to subsequent adjustment status extending through any substantial period in the future (Cannon, 1958; Gronlund and Holmlund, 1958). There is a large literature on the perso-

nality characteristics exhibited concurrently by well-liked and poorly-liked children. The earliest study of this kind that we have found is that of Terman (Terman, 1904), who compared children rated by teachers as high and low in peer status, and described in detail the characteristics of a number of high and low individuals. Although he worked with teachers' ratings, the correlation between these and children's choices is about .60, he was able to give a picture of the highly chosen as contrasted with the unliked child which gives much of the information presented by later writers (Baron, 1951; Bedoian, 1953; Bonney, 1947; Bonney, 1955; Davis, 1957; Gronlund and Anderson, 1957; Kuhlen and Bretsch, 1947; Phillips and DeVault, 1955).

5. What are the developmental and behavior processes involved in the pathognomonic sequellae of peer rejection in childhood?

To a degree, some significant information has been obtained in relation to each of these questions. Another feature of the design has been provision for organization of the files to facilitate further followup studies. During the five years of the program the initial sample of children in grades 3 through 6 has advanced to 6 through 9. Even during this period, significant results related to school dropout and delinquency have been obtained. It is hoped that support may be made available for further followup studies. The present report is more complete in relation to the first four questions, but the results of the followup studies enabled thus far are clearly in agreement with the long-term findings reported by Roff (1956; 1957; 1960; 1961a; 1963a).

MEASUREMENT OF PEER ACCEPTANCE-REJECTION

Since no standard files on peer acceptance-rejection are ordinarily maintained in schools, except perhaps for the minority referred for psychological services, evidence on this aspect of behavior could be obtained by essentially three approaches: observation, rating (based on observation), and self-report. Observational reports, by teachers or project staff, are expensive, run the risk of disturbing the "natural" social situation by the presence of strangers, and must still be quantified, even when adequately recorded. Observational reports were considered and rejected for these reasons. Self-report instruments are of uncertain validity (Kogan and Tagiuri, 1958; Saterlee, 1955) and were judged to be of doubtful utility for the present purpose. Further, objections were anticipated if such instruments were to be employed. Nominations by peers and ratings by teachers, both already familiar with the children in the group in which choices or ratings are made, are direct and methods of determining peer-choice status, which, while somewhat different, are quite highly correlated. The use of peer ratings to obtain indications of well-liked and not-well-liked children is essentially similar in principle to bio-assay methods in the biological sciences, which are found superior to other procedures for determining certain kinds of information. There is again a very substantial literature on both peer ratings and ratings by teachers (Bonney, 1943a; Gronlund, 1950a; 1950b; 1955a; 1956; Myers, 1961; Ullmann, 1957). In situations where enough time has elapsed to permit thorough familiarity, these are unsurpassed, if not unequaled, by any other form of psychological appraisal, for getting a picture of peer status.

For the large-scale survey planned, the method devised had also to meet criteria of economy, ease of handling, and adaptability to an automatic data processing system. At the time the study was planned, the most suitable procedure, among those reviewed, was the IBM Mark Sense Card. Preprinted to facilitate correct marking, and providing enough spaces to rate an entire class-group on a single card, the Mark Sense Card was ideally adapted to the present study, although more efficient optical scanning equipment has since become commercially available. Once the ratings were marked on cards, by pupils or teachers, providing the basic data input, all subsequent counts, transformations, correlations, and other analyses could be performed at high speed on the automatic card machines and computers.

PEER CHOICE MEASURES

With the Mark Sense equipment in mind, a sociometric choice procedure was designed which involved the following significant features:

1. Peer choices were made directly on Mark Sense Cards, using mimeographed rosters with identification numbers corresponding to card columns. This procedure was compatible with that for Teacher Ratings and enabled the use of automated analysis of data.

2. Pretests indicated that such ratings could be made with ease by children in the third grade, but not in the first or second grades. For this reason, primarily, the lowest grade included in the study was grade 3. Interval consistency data based on subsequent retests showed that the third graders did as well as older children. It would have been possible to include younger children, using more expensive methods, including picture rosters, but this was not practicable.

3. Class rosters were obtained from classroom teachers a week to ten days prior to the arranged rating dates, permitting the preparation of mimeographed class lists, used for the ratings. The class rosters included the child's birthdate in order to facilitate identification and to provide a record of the child's age.

4. Rating procedures were administered by classroom teachers and returned to the project staff by school coordinators who gathered them for the entire school. In small communities, one coordinator served for an entire district. To avoid contamination, teacher ratings were completed prior to the peer choices.

5. Peer choices were separated by sex groups; boys rated boys, only, and girls rated girls. Each set was designated a class-group. This procedure was adopted after consideration of the social relations among boys and girls in the early grades; boy and girl roles involve culturally focused attitudes toward the opposite sex that might disturb the assessment of peer acceptance-rejection. Cards for boys and girls were of different color.

6. The peer choices were confined to nominations of individuals, on the name lists furnished, that the rater Liked Most (LM) and Liked Least (LL). In class-groups of 9 or more, pupils were instructed to make 4 LM choices and 2 LL choices. Appropriate reductions in numbers chosen were made for class-groups of smaller size. The choice procedure required each pupil to cross out his own name and number on the roster sheet before making his LM and LL nominations on the Mark Sense Cards. This procedure required only about an average of 15 minutes per class. After distributing the boy lists to boys and the girl lists to girls, both class-groups

recorded their nominations at the same time.

Determination of Rating Dimensions

The selection of Like Most and Like Least as the dimensions on which the ratings were to be made was influenced partly by the fact that these general, as opposed to specific, phrases were closest to the original findings of the relations between childhood peer status and adult maladjustment by Roff. It was based also on a review of the literature and some pretesting on our own. We can draw an analogy here with IQ. An intelligence test is made up of items which are imperfectly correlated, some of thich are more closely correlated with total score than others; vocabulary characteristically correlates very highly with total IQ. Similarly, such commonly used questions as Who is your friend? and With whom do you like to study? are in themselves intercorrelated at least as highly as intelligence test items. The interrelations between these have been explored quite extensively (Gronlund, 1955a; Mitchell, 1956). The results with these different questions characteristically varies slightly from question to question and there is no obvious basis for a selection of a "best" one. The number of votes received by the same individual indicated a high communality, despite the fact that the choosers appeared to be responsive to the specific nuances of each separate question. We thus decided that the direct questions on Like Most and Like Least were most clearly related to our research problem, involved the fewest assumptions semantically, and at the same time could be defended in terms of their correlations with questions related to specific activities.

Inclusion of Negative Ratings

As everyone with experience in sociometric investigation knows, the negative nomination is a perennial problem. People of all ages resist making publicly derogatory or even mildly negative statements about their fellows. This is a currently vexatious problem in American schools and objections have occasionally been aroused by the inclusion of the negative ratings. Nevertheless both the literature (Gronlund, 1959; Justman and Wrightstone, 1951) and the pretest results showed clearly that the choice status of children might vary considerably on LM and LL ratings and that LL was not a highly predictable opposite of LM. The median correlation between the two is about .50, which accounts for only about 25 per cent of their common variance. Although a large number of LL votes received could be accepted as an indicator of peer rejection, a small number of LM votes received may not indicate the same status. It may reflect only nonselection of uninteresting or sometimes newly arrived individuals, who are also not selected in negative nominations. For this reason, and because Roff's prior studies had emphasized the rejection end of the acceptance-rejection continuum, it was decided to insist on inclusion of the LL ratings as a condition of the study in every school. In spite of this policy, one Texas school district administered only the LM ratings, as a result of objections raised after the survey arrangements had been scheduled.

The decision to obtain 4 LM ratings and only 2 LL ratings was a move toward accommodating to the experienced antipathy against negative ratings. This was made after much discussion and search for a means of making the negative rating as palatable as possible without destroying its validity. Choice of the term Like Least rather than Dislike reflected the same thinking. In discussing the project with school officials, PTA representatives, and teachers, it was frequently apparent that Like Least was acceptable and could be rationalized as not violating religious and ethical principles, while Dislike would be considered objectionable.

Scores Derived

Rating cards were punched from the Mark Sense Cards, using the IBM 514 Reproducing Punch. These were then run through an IBM 1620 computer which counted the number of LM and LL votes received by each member of each class-group and then computed three z-scores, for LL, LM, and LM-LL. The LL scores were reflected so that high (liked) peer choice status was always the high extreme. The z-scores, which were computed with a standard mean of 5 and standard deviation of 1, were adopted as a simple, but effective means of correcting for variations in class-group size. Thus the scores reflected deviation from class means in units of standard deviation rather than absolute number of votes received, which could vary widely on the basis of group size without reference to sociometric status. The use of 5 as the mean, rather than 0, eliminated negative scores and simplified computation.

The Mark Sense procedure worked almost perfectly throughout the study. The processing of cards through the reproducer and computer made the once prohibitive tasks of visual inspection for double marks and other errors and of manual counting an almost effortless, but vastly more accurate process. The tabulations of votes and computation of scores was accomplished rapidly, accurately, expeditiously, and economically. Appendix 1 presents specimen forms and instructions.

TEACHER RATINGS

Teacher Ratings were completed at the time that the classroom teachers prepared the class-group rosters that were used in the sociometric rating procedure. This assured completion of Teacher Ratings ahead of pupil ratings and removed any opportunity of direct influence on teachers' ratings from that source.

The initial Teacher Rating procedure employed a 4-step scale, by means of which each teacher rated the peer relations of each pupil in his or her boy- and girl- class-group individually as follows:

1. having exceptionally good peer relations
2. average - no negative indications or outstanding positive indications
3. borderline rejection
4. clearly rejected by peers

Inspection of the distribution of first-year ratings indicated a need for extension of the scale, since there was, as predicted, a preponderance of 2 ratings, and suggested the desirability of converting the ratings to z-scores, as a partial correction for rater idiosyncracy. The Teacher Rating scale adopted for year 2, and retained thereafter, was a 7-point scale, as follows:

1. extremely high - outstanding peer relations
2. extremely high - superior peer relations
3. high acceptance among peers
4. moderate acceptance among peers
5. low peer relations
6. rejected generally by peers
7. rejected entirely by peers

Distributions of Teacher Ratings on the extended scale produced greater dispersion in the middle range. Correlations on the same samples from year to year are discussed later.

These correlations and correlations of Teacher Ratings with peer choice scores revealed substantial reliability of Teacher Ratings as well as significant agreement with ratings made by pupils. Variations among Teacher Ratings by men and women teachers in rating boys and girls and relations with teacher training and other background factors are also discussed in a subsequent section.

Teacher Rating cards were also color-coded for boys and girls, as shown in the exhibits in Appendix II. Programs for conversion of ratings to z-scores, coordinated with those for the Sociometric ratings, were developed. The integrated program was rapid and efficient.

SAMPLING DESIGN

In the first year, 1961-2, this study included 37,913 pupils (19,422 boys and 18,491 girls) in grades 3 through 6, and 1299 teachers, in 185 schools in 19 Texas school districts and 2 metropolitan Minnesota cities. The pupils were assigned to 1382 classes, which exceeds the number of teachers by 83. The difference is accounted for by a practice, found occasionally in both states, of assigning some teachers to split home room classes, covering as many as three adjacent grades. In such cases, the split class groups were accounted for as separate classes. In Minnesota, where all testing was done in elementary schools, combined classes were treated as one class.

Following the large-scale initial-year survey, the requirements for numbers of subjects were reviewed in relation to the types of further studies planned. These involved analysis of reliability and stability of peer status measures over time, of measures of change in peer status over a four-year period, and studies in depth of small, selected samples, involving a wider spectrum of information collected from family and other sources. Followup studies in relation to school dropout, delinquency, and other outcomes, requiring search of records, and correlational analyses involving school grades, test scores, and other recorded school information, could be made with the first-year sample and related to similar analyses on smaller continuing samples. Hence the decision was made to reduce the total sample for the remaining three years in which data were gathered.

Basic Considerations

The general concept followed in sample selection involved the following considerations:

(1) As far as possible, the research would be conducted in entire grades within a school district; that is, if a school district agreed to participate, one condition observed was the inclusion of the entire population of each grade selected. Most of the districts that participated provided all four grades requested. In Minneapolis, where the City

was mapped by socioeconomic levels, the lower two of four SES districts were included. All of these schools were included, except for a few with prior commitments to other research activities. In Waco, Texas, the survey was restricted to three schools. However, in the remaining districts, this rule was followed. The result was that for each population segment included there was, with the exceptions noted, a complete sample.

(2) In the interest of economy, the school districts asked to participate were within close driving and telephone range to the two University headquarters. In Texas, the participating communities were within a 100-mile radius of Fort Worth, or, if more distant (Abilene), on a main highway. In Minnesota, the cities of Minneapolis and St. Paul were within the principal metropolitan area of the University of Minnesota.

(3) Each participating district was required, of necessity, to make a substantial contribution of staff time and personnel skills to the study. In Texas, this involved appointment of one or more (and in the larger cities, considerably more) supervisory staff as local Coordinators, to channel communications between University staffs and schools and classroom teachers, to organize and insure that instructions were faithfully followed, to distribute, collect, and ship all rating forms, and to adjust local problems, particularly special procedures for absentees, roster changes,

and large or small classes requiring special handling. It also involved scheduling of teacher meetings, participation of teachers, and use of class time for the ratings. The importance of competent supervision and high-level administrative support of the study was appreciated and these factors, which were observed in arrangements for the initial survey, were major determiners of selection for the followup years. In Minnesota, where the cities of Minneapolis and St. Paul are immediately adjacent, and contain the University, most of the administrative work listed for Texas was done directly by project personnel, in cooperation with the individual schools. As mentioned in the first chapter, the work and positive concern of all the school personnel who contributed to this study was a massive contribution and the importance of this generous cooperation cannot be overemphasized.

(4) School districts were favored which had a continuing practice of research, testing, professional pupil record-keeping, and pupil personnel services. Nevertheless, a number of smaller districts, in which participation in this study was viewed as a move toward greater professional activity, were accepted because of the interest and cooperation shown.

(5) Finally, with the one exception noted earlier, all participating districts were expected to include the LL as well as LM peer ratings.

ANALYSIS OF SAMPLE

Tables 1 through 4 give a broad picture of the sample, year by year. Of the nineteen Texas school districts participating in the first year, four remained in the study for all four years; nine participated only in the first year, five for two years, and one for three years. Minneapolis participated for four years, while St. Paul, the other Minnesota city, was included only in year one. The numbers of schools, classes, teachers, and pupils in the continuing cities varied from year to year according to population trends and consequent school organization adjustments. As a result, each year there were some cases lost and some additions, as well as a large number of continuing pupils. For some analyses, the total year-samples were used, while for others, such as year-to-year correlational studies, it was necessary to match names and include only the net sample.

The pupil samples were determined by the class-group rosters as of the day on which the peer choices were made. Teachers added or deleted names reflecting roster changes between the day on which the rosters were made up for the project and the day on which the peer choices were made. Absent pupils were rated by their class-groups and *z*-scores, in those cases, were computed on the basis of the number of pupils present. Absentees were not followed to obtain their

Table 1. Texas, Minnesota, and Total samples, Year I, by school district, numbers of schools, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade			
				3	4	5	6
TEXAS							
Abilene	11	3282	110	31	29	26	26
Azle	4	713	24	6	6	6	6
Birdsville	2	619	22	6	5	6	5
Bonham	3	532	18	4	5	4	5
Bowie	3	435	16	4	4	4	4
Breckenridge	4	586	22	6	7	5	6
Castleberry	2	1322	43	12	11	11	9
Cleburne	7	1336	49	12	14	11	12
Denison	7	1404	55	15	15	12	13
Everman	2	469	15	5	3	4	3
Graham	3	845	29	8	9	6	6
Hillsboro	5	577	21	5	5	5	6
Hurst	11	1778	57	1	22	19	17
Jacksboro	1	269	9	3	3	3	0
McKinney	6	1194	41	10	11	10	10
Mineral Wells	5	1129	41	11	10	10	10
Sherman	8	1636	65	19	15	15	15
Stephenville	2	543	17	5	4	4	4
Waco	3	948	37	10	10	8	9
Texas Total	89	19617	691	173	188	169	166
MINNESOTA							
St. Paul	70	11633	392	112	119	116	104
Minneapolis	26	6663	216	60	58	58	59
Minnesota Total	96	18296	608	172	177	174	163
TEXAS AND MINNESOTA COMBINED	185	37913	1299	345	365	343	329

Table 1a. Negroes in the Texas sample, Year I, by school district, numbers of schools, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No Schools	No. Pupils	No. Teachers	No. Classes by Grade 3	4	5	6
Breckenridge	1	23	1				1
Cleburne	1	114	4	1	1	1	1
Hillsboro	1	109	6		2	2	2
Hurst	1	47	2		1		1
McKinney	1	128	4	1	1	1	1
Mineral Wells	1	72	4	1	1	1	1
Waco	1	327	12	3	3	3	3
Texas Total	7	820	33	6	9	8	10

Table 2. Texas, Minnesota and Total samples, Year II, by school district, numbers of schools, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade 4	5	6	7
TEXAS							
Abilene	14	3000	93	35	27	28	18
Birdville	1	415	14	5	4	5	0
Bonham	2	544	18	4	4	5	5
Bowie	4	476	16	4	4	4	4
Breckenridge	5	575	21	6	6	5	6
Castleberry	2	1027	32	11	11	10	0
Everman	3	416	13	4	4	5	0
Hillsboro	5	614	21	5	5	6	5
McKinney	5	881	31	7	7	6	11
Waco	3	684	26	8	10	8	0
Texas Total	44	8632	285	89	82	82	49
MINNESOTA Total*	27	4775	164	54	52	58	
TEXAS AND MINNESOTA COMBINED	71	13407	449	143	134	140	49

* Minneapolis only

Table 2a. Negroes in the Texas sample, Year II, by school district, numbers of schools, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade 4	5	6	7
Breckenridge	1	31	1				1
Hillsboro	1	140	4	1	1	1	1
McKinney	1	130	4	1	1	1	1
Waco	1	236	9	3	3	3	
Texas Total	4	537	18	5	5	5	3

Table 3. Texas, Minnesota, and Total samples, Year III, by school district, numbers of schools, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade				
				4	5	6	7	8
TEXAS								
Bonham	2	581	19		4	5	5	5
Castleberry	3	1307	40		11	11	9	9
Everman	3	528	19		5	5	5	4
McKinney	4	924	36		7	7	11	11
Waco	3	464	18		9	9	0	0
Texas Total	15	3804	132		36	37	30	29
MINNESOTA Total*	26	3101	111	2	52	57		
TEXAS AND MINNESOTA COMBINED	41	6905	243	2	88	94	30	29

* Minneapolis only

Table 3a. Negroes in the Texas sample, Year III, by school district, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade 5	6	7	8
McKinney	1	125	4	1	1	1	1
Waco	1	159	6	3	3		
Texas Total	2	284	10	4	4	1	1

Table 4. Texas, Minnesota, and Total samples, Year IV, by school district, numbers of schools, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade 6	7	8	9
TEXAS							
Bonham	2	580	20	5	5	5	5
Castleberry	3	1259	43	10	11	10	12
Everman	4	568	19	6	4	4	5
Waco	3	226	9	9	0	0	0
Texas Total	12	2697	91	30	20	19	22
MINNESOTA Total*	35	2227	80	80			
TEXAS AND MINNESOTA COMBINED	47	4924	171	110	20	19	22

* Minneapolis only

Table 4a. Negroes in the Texas sample, Year IV, by school district, numbers of pupils, numbers of teachers, and numbers of classes by grade.

School District	No. Schools	No. Pupils	No. Teachers	No. Classes by Grade 6	7	8	9
Waco	1	80	3	3			

choices later, although some teachers undoubtedly did this before returning the cards to the coordinator.

Following this procedure, there were fewer Teacher Ratings than peer choice scores. Teacher Ratings were made at the time that rosters were furnished and teachers were not requested to make subsequent ratings, first, because of the burden, and second, because in many cases they would not have had adequate time to observe the new child. As a result, the loss of complete cases ranged from about 5 per cent, the first year, to 1.5 per cent, in the third year.

Since completeness of data implied availability of LL as well as LM and Teacher Ratings (TR), there were also 1778 cases from the Texas community of Hurst in year one which lacked LL ratings. This district did not participate in subsequent years.

The total sample, by year, was as follows:

Year	No. Districts	No. Pupils	No. Complete	% Complete
I	19(Texas), 2(Minn.)	37,913	34,366	90.6
II	10(Texas), 1(Minn.)	13,407	13,197	98.4
III	5(Texas), 1(Minn.)	6,905	6,801	98.5
IV	4(Texas), 1(Minn.)	5,025	4,940	98.3

Table 5 presents the breakdown of completeness of data in more detail, by year, grade, and sex. Tables 6 through 9 summarize, year by year, the numbers of boys and girls in the sample, by district, by state, and for the total sample. Tables 10 through 13 present comparable data on numbers of cases on which complete peer and teacher rating data were

Table 5. Distribution of annual samples, showing numbers of cases with complete and missing data.

				Missing Data		Complete Data	
Year	Grade	Sex	Total Sample	LL Scale Not Admin.	Not Rated by Teacher	N	Per cent
I	3	B	4563		232	4331	(94.9)
	3	G	4301		191	4110	(9[illegible].6)
	4	B	5097	348	248	4501	(88.3)
	4	G	4764	311	200	4253	(89.3)
	5	B	4700	297	207	4196	(89.3)
	5	G	4647	288	192	3167	(89.7)
	6	B	5062	279	252	4531	(89.5)
	6	G	4779	255	247	4277	(89.5)
	Combined	B	19422	924	939	17559	(90.4)
	Combined	G	18491	854	830	16807	(90.9)
	Total		37913	1778	1769	34366	(90.6)
II	4	B	2050		38	2012	(98.1)
	4	G	2004		25	1979	(98.8)
	5	B	1992		26	1966	(98.7)
	5	G	1893		27	1866	(98.6)
	6	B	1999		40	1959	(98.0)
	6	G	2053		34	2019	(98.3)
	7	B	750		12	738	(98.4)
	7	G	666		8	658	(98.8)
	Combined	B	6791		116	6675	(98.3)
	Combined	G	6616		94	6522	(98.6)
	Total		13407		210	13197	(98.4)
III	4	B	27		1	26	(96.2)
	4	G	25		0	25	(100)
	5	B	1261		22	1238	(98.2)
	5	G	1195		19	1176	(98.4)
	6	B	1375		18	1357	(98.7)
	6	G	1343		16	1327	(98.8)
	7	B	450		10	440	(97.8)
	7	G	421		5	416	(98.8)
	8	B	420		9	411	(97.9)
	8	G	389		4	385	(99.0)
	Combined	B	3532		60	3472	(98.3)
	Combined	G	3373		44	3329	(98.7)
	Total		6905		104	6801	(98.5)
IV	6	B	1626		16	1610	(99.0)
	6	G	1599		15	1584	(99.1)
	7	B	322		9	313	(97.0)
	7	G	335		12	323	(96.4)
	8	B	288		7	281	(97.6)
	8	G	288		6	282	(97.9)
	9	B	306		10	296	(96.7)
	9	G	261		10	251	(96.2)
	Combined	B	2542		42	2500	(98.3)
	Combined	G	2483		43	2440	(98.3)
	Total		5025		85	4940	(98.3)

Table 6. Texas and Minnesota samples, Year I, numbers of pupils by grade and by sex.

School	Grade				Sex		
District	3	4	5	6	Boys	Girls	Total
TEXAS							
Abilene	938	820	754	770	1657	1625	3282
Azle	169	172	188	184	371	342	713
Birdville	154	149	172	144	325	294	619
Bonham	112	151	140	129	273	259	532
Bowie	116	91	111	117	236	199	435
Breckenridge	175	149	121	141	289	297	586
Castleberry	347	355	328	292	667	655	1322
Cleburne	321	340	335	340	690	646	1336
Denison	329	371	314	390	725	679	1404
Everman	128	108	126	107	256	213	469
Graham	228	273	165	179	474	371	845
Hillsboro	117	151	148	161	305	272	577
Hurst	-	659	585	534	924	854	1778
Jacksboro	82	102	85	-	137	132	269
McKinney	296	326	287	285	603	591	1194
Mineral Wells	295	279	278	277	582	547	1129
Sherman	471	404	395	366	865	771	1636
Stephenville	153	136	133	121	288	255	543
Waco	245	257	216	230	471	477	948
Texas Total	4676	5293	4881	4767	10138	9479	19617
MINNESOTA							
St. Paul (SES I)	631	706	756	793	1446	1440	2886
St. Paul (SES II)	512	842	648	786	1411	1377	2788
St. Paul (SES III)	772	757	761	707	1561	1436	2997
St. Paul (SES IV)	655	724	764	819	1486	1476	2962
Minneapolis (SES III)	900	777	857	1046	1842	1738	3580
Minneapolis (SES IV)	718	762	680	923	1538	1545	3083
Minnesota Total	4188	4568	4466	5074	9284	9012	18296
TEXAS AND MINNESOTA COMBINED	8864	9861	9347	9841	19422	18491	37913

Table 6a. Texas sample, Year I, numbers of Negroes by grade and by sex.

School District	Grade 3	Grade 4	Grade 5	Grade 6	Sex Boys	Sex Girls	Total
Breckenridge				23	12	11	23
Cleburne	28	21	27	38	63	51	114
Hillsboro		42	32	35	72	37	109
Hurst		24		23	23	24	47
McKinney	32	33	39	24	69	59	128
Mineral Wells	17	18	22	15	41	31	72
Waco	90	73	85	79	162	165	327
Texas Total	167	211	205	237	442	378	820

Table 7. Texas and Minnesota samples, Year II, number of pupils by grade and by sex.

School	Grade				Sex		
District	4	5	6	7	Boys	Girls	Total
TEXAS							
Abilene	980	729	777	514	1493	1507	3000
Birdville	144	127	144	-	217	198	415
Bonham	122	150	146	126	275	269	544
Bowie	129	103	109	135	254	222	476
Breckenridge	143	137	111	184	290	285	575
Castleberry	364	345	318	-	510	517	1027
Everman	120	134	162	-	225	191	416
Hillsboro	150	147	154	163	334	280	614
McKinney	186	214	187	294	452	429	881
Waco	232	250	202	-	342	342	684
Texas Total	2570	2336	2310	1416	4392	4240	8632
MINNESOTA							
Minneapolis (SES III)	824	829	979	-	1354	1278	2632
Minneapolis (SES IV)	660	720	763	-	1045	1098	2143
Minnesota Total	1484	1549	1742	-	2399	2376	4775
TEXAS AND MINNESOTA COMBINED	4054	3885	4052	1416	6791	6616	13407

Table 7a. Texas sample, Year II, numbers of Negroes by grade and by sex.

School	Grade				Sex		
District	4	5	6	7	Boys	Girls	Total
Breckenridge				31	19	12	31
Hillsboro	35	35	33	37	91	49	140
McKinney	34	34	36	26	72	58	130
Waco	86	73	77		116	120	236
Texas Total	155	142	146	94	298	249	537

Table 8. Texas and Minnesota samples,Year III, numbers of pupils by grade and by sex.

School District	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Sex Boys	Sex Girls	Total
TEXAS								
Bonham		153	154	144	130	300	281	581
Castleberry		336	350	319	302	671	636	1307
Everman		133	123	143	129	269	259	528
McKinney		189	222	265	248	482	442	924
Waco		226	238	-	-	231	233	464
Texas Total		1037	1087	871	809	1953	1851	3804
MINNESOTA								
Minneapolis (SES III)	29	770	917	-	-	881	835	1716
Minneapolis (SES IV)	23	648	714	-	-	698	687	1385
Minnesota Total	52	1418	1631	-	-	1579	1522	3101
TEXAS AND MINNESOTA COMBINED	52	2455	2718	871	809	3532	3373	6905

Table 8a. Texas sample, Year III, numbers of Negroes by grade and by sex.

School	Grade				Sex		
District	5	6	7	8	Boys	Girls	Total
McKinney	30	31	38	26	70	55	125
Waco	86	73			77	82	159
Texas Total	116	104	38	26	147	137	284

Table 9. Texas and Minnesota sample, Year IV, numbers of pupils by grade and by sex.

School District	Grade 6	7	8	9	Sex Boys	Girls	Total
TEXAS							
Bonham	159	165	139	127	308	282	590
Castleberry	334	360	317	289	652	648	1300
Everman	177	132	120	151	302	278	580
Waco	227	-	-	-	126	101	227
Texas Total	897	657	576	567	1388	1309	2697
MINNESOTA							
Minneapolis (SES III)	1490	-	-	-	741	749	1490
Minneapolis (SES IV)	838	-	-	-	413	425	838
Minnesota Total	2328	-	-	-	1154	1174	2328
TEXAS AND MINNESOTA COMBINED	3225	657	576	567	2542	2483	5025

Table 9a. Texas sample, Year IV, numbers of Negroes by grade and by sex.

School District	Grade 6	7	8	9	Sex Boys	Girls	Total
Waco	80				41	39	80

Table 10. Texas and Minnesota samples, Year I, numbers of pupils by grade and by sex, with complete data.

School	Grade				Sex		
District	3	4	5	6	Boys	Girls	Total
TEXAS							
Abilene	891	778	721	730	1567	1553	3120
Azle	163	172	184	178	362	335	697
Birdville	152	147	169	142	320	290	610
Bonham	112	150	140	127	272	257	529
Bowie	116	73	110	116	234	181	415
Breckenridge	172	147	119	135	282	291	573
Castleberry	334	347	319	288	650	638	1288
Cleburne	315	334	329	330	679	629	1308
Denison	288	311	280	383	650	612	1262
Everman	124	104	125	103	251	205	456
Graham	227	271	164	178	472	368	840
Hillsboro	117	151	148	160	305	271	576
Jacksboro	81	99	84	-	134	130	264
McKinney	290	316	276	281	588	575	1163
Mineral Wells	288	273	275	273	572	537	1109
Sherman	459	398	388	357	847	755	1602
Stephenville	149	134	133	118	284	250	534
Waco	243	257	215	230	469	476	945
Texas Total	4521	4462	4179	4129	8938	8353	17291
MINNESOTA							
St. Paul (SES I)	630	704	756	790	1441	1439	2880
St. Paul (SES II)	512	842	645	784	1407	1376	2783
St. Paul (SES III)	772	755	743	686	1544	1412	2956
St. Paul (SES IV)	645	700	762	819	1470	1456	2926
Minneapolis (SES III)	758	677	724	876	1529	1506	3035
Minneapolis (SES IV)	603	614	554	724	1230	1265	2495
Minnesota Total	3920	4292	4184	4679	8621	8454	17075
TEXAS AND MINNESOTA COMBINED	8441	8754	8363	8808	17559	16807	34366

Table 11. Texas and Minnesota samples, Year II, number of pupils by grade and by sex with complete data.

School District	Grade 4	Grade 5	Grade 6	Grade 7	Sex Boys	Sex Girls	Total
TEXAS							
Abilene	941	705	754	498	1441	1457	2898
Birdville	144	126	144	-	217	197	414
Bonham	122	150	146	126	275	269	544
Bowie	129	99	107	131	248	218	466
Breckenridge	137	136	109	184	284	282	566
Castleberry	358	340	308	-	498	508	1006
Everman	120	132	160	-	224	188	412
Hillsboro	150	146	154	163	333	280	613
McKinney	186	213	186	294	450	429	879
Waco	232	250	202	-	342	342	684
Texas Total	2519	2297	2270	1396	4312	4170	8482
MINNESOTA							
Minneapolis (SES III)	817	821	975		1341	1272	2613
Minneapolis (SES IV)	655	714	733		1022	1080	2102
Minnesota Total	1472	1535	1708		2363	2352	4715
TEXAS AND MINNESOTA COMBINED	3991	3832	3978	1396	6675	6522	13197

Table 12. Texas and Minnesota samples, Year III, numbers of pupils by grade and by sex with complete data.

School			Grade			Sex		
District	4	5	6	7	8	Boys	Girls	Total
TEXAS								
Bonham		152	154	144	130	300	280	580
Castleberry		331	341	311	298	658	623	1281
Everman		133	122	140	128	264	259	523
McKinney		180	213	261	240	461	433	894
Waco		208	235			221	222	443
Texas Total		1004	1065	856	796	1904	1817	3721
MINNESOTA								
Minneapolis (SES III)	29	767	911			878	829	1707
Minneapolis (SES IV)	22	643	708			690	683	1373
Minnesota Total	51	1410	1619			1568	1512	3080
TEXAS AND MINNESOTA COMBINED	51	2414	2684	856	796	3472	3329	6801

Table 13. Texas and Minnesota samples, Year IV, numbers of pupils by grade and by sex with complete data.

School District	Grade 6	7	8	9	Sex Boys	Girls	Total
TEXAS							
Bonham	157	163	135	125	304	276	580
Castleberry	329	345	312	273	633	626	1259
Everman	175	128	116	149	295	273	568
Waco	226				126	100	226
Texas Total	887	636	563	547	1358	1275	2633
MINNESOTA							
Minneapolis (SES III)	1474				729	745	1474
Minneapolis (SES IV)	833				413	420	833
Minnesota Total	2307				1142	1165	2307
TEXAS AND MINNESOTA COMBINED	3194	636	563	547	2500	2440	4940

obtained. Tables 14, 15, and 16 summarize numbers, arranged similarly, available for both years 1 and 2, for years 1, 2, and 3, and for all four years. These data are recapitulated, by state totals, and show the followup samples as per cents of the first year sample in Table 17.

At the time of this study a number of school districts in Texas followed the traditional pattern of segregated schools for Negroes. Although this practice has since been changed, the survey program included data from seven segregated, all-Negro schools in seven communities. Inasmuch as racial identification is prohibited in school records, the data from these schools provided a valuable opportunity to make a number of scientifically important comparisons, particularly of choice patterns among all-Negro groups in relation to those among the general, non-Negro peer society. Cross-racial comparisons were not possible in the data available.

Several studies involving Negro pupils are included in this report. However, in the large-scale analyses of reliability, stability, and intercorrelations among peer scores the Negro samples were not uniformly separated. The Negro sample is identified in Tables 1a through 4a and 6a through 9a. The total number of Negro children in Year I was 820, which represents approximately 4 per cent of the total Texas sample. This does not represent all of the segregated Negro schools in the nineteen districts in the Texas sample, but only those for which arrangements for data collection were made.

Table 14. Texas and Minnesota **Two-Year** samples, numbers of pupils by grade and by sex with complete data.

School District	Grade 4	5	6	7	Sex Boys	Girls	Total
TEXAS							
Abilene	640	526	534	285	982	1003	1985
Birdville	107	105	126		177	161	338
Bonham	102	133	123	114	237	235	472
Bowie	110	61	96	107	207	167	374
Breckenridge	124	120	89	112	216	229	445
Castleberry	265	281	252		399	399	798
Everman	88	91	131		177	133	310
Hillsboro	103	132	133	134	266	236	502
McKinney	156	181	160	248	375	370	745
Waco	180	202	167		273	276	549
Texas Total	1875	1832	1811	1000	3309	3209	6518
MINNESOTA							
Minneapolis (SES III)	508	526	606		810	830	1640
Minneapolis (SES IV)	402	445	457		619	685	1304
Minnesota Total	910	971	1063		1429	1515	2944
TEXAS AND MINNESOTA COMBINED	2785	2803	2874	1000	4738	4724	9462

Table 15. Texas and Minnesota Three-Year samples, numbers of pupils by grade and by sex with complete data.

School	Grade				Sex		
District	5	6	7	8	Boys	Girls	Total
TEXAS							
Bonham	98	122	113	103	224	212	436
Castleberry	219	226	215		326	334	660
Everman	76	70	87		124	109	233
McKinney	133	159	133	187	310	302	612
Waco	144	172			161	155	316
Texas Total	670	749	548	290	1145	1112	2257
MINNESOTA							
Minneapolis (SES III)	422	506			457	471	928
Minneapolis (SES IV)	324	368			334	358	692
Minnesota Total	746	874			791	829	1620
TEXAS AND MINNESOTA COMBINED	1416	1623	548	290	1936	1941	3877

Table 16. Texas and Minnesota Four-Year samples, numbers of pupils by grade and by sex with complete data.

School District	Grade 6	7	8	9	Sex Boys	Girls	Total
TEXAS							
Bonham	92	117	103	95	210	197	407
Castleberry	195	196	193		285	299	584
Everman	67	57	60		95	89	184
Waco	132				71	61	132
Texas Total	486	370	356	95	661	646	1307
MINNESOTA							
Minneapolis (SES III)	388				186	202	388
Minneapolis (SES IV)	282				130	152	282
Minnesota Total	670				316	354	670
TEXAS AND MINNESOTA COMBINED	1156	370	356	95	977	1000	1977

Table 17. Proportions of Year I sample (with complete data) retained in the study in subsequent years.

	Total Complete Year I Sample	Proportions Retained Through:					
		Year II		Year III		Year IV	
	N	N	Per cent	N	Per cent	N	Per cent
TEXAS							
Boys	8938	3309	37.0	1145	12.8	661	7.4
Girls	8353	3209	38.4	1112	13.3	646	7.7
Total	17291	6518	37.7	2257	13.1	1307	7.6
MINNESOTA							
Boys	8621	1429	16.6	791	9.2	316	3.7
Girls	8454	1515	17.9	829	9.7	354	4.2
Total	17075	2944	17.2	1620	9.5	670	3.9
TEXAS AND MINNESOTA COMBINED							
Boys	17559	4738	26.9	1936	11.0	977	5.6
Girls	16807	4724	28.1	1941	11.5	1000	5.9
Total	34366	9462	27.5	3877	11.3	1977	5.8

Data were collected on population parameters and socioeconomic status for all schools in the study and are reported in relation to peer scores and associated variables in subsequent sections. Socioeconomic and population parameters of communities were not, however, part of the sample design.

ORGANIZATION OF THE STUDY

The total study is reported under four major divisions, which represent logical organization of substudies and analysis, but not necessarily the chronological order of the entire investigation. These major divisions, which identify the heading of the next four chapters, are:

III. Methodological Problems in the Estimation of Peer Acceptance-Rejection

IV. Antecedent Correlates of Peer Acceptance-Rejection

V. Followup Studies. Later Correlates of Peer Acceptance-Rejection in the Elementary Grades

VI. Analyses of Developmental Processes Associated with Peer Acceptance-Rejection

Methodological Problems

A preliminary report by the principal investigators (Sells and Roff, 1964a) discussed many of the methodological issues in the estimation of peer acceptance-rejection in the early grades. The present report includes a complete analysis and supporting tables on intercorrelations among the LM, LL, and TR scores, other scores derived from them, such as LD (LM-LL) and DT (2LD+TR), their reliability estimated by split-half and retest methods, their stability from year to year, and perturbing factors, such as class size, teacher characteristics and school organization. Particular attention has been paid, in addition to the basic analyses of the peer choice scores, to the utility of matrix methods in the analysis of sociometric data (Roff and Sells, 1967).

Antecedent Correlates of Peer Acceptance-Rejection

The peer status scores have been correlated with IQ, socioeconomic status, birth order, family membership in relation to like- and unlike-sex sibling or fraternal twin, and identical twin, school achievement, personality measures, and many indices of family background. In line with our expectation of substantial family resemblance (Roff, 1950), family influence emerged as a major factor in peer status. The comparison of sibling and twin peer relations scores with those of randomly matched controls confirmed this observation and led to more detailed investigations of family background effects, including the study of 100 families in the Castleberry School District, by Cox (1966) mentioned below.

Followup Studies: Later Correlates of Peer Acceptance-Rejection

Within the five years spanned by this study, the samples measured in the first year advanced from the range of grades 3 to 6 to grades 6 to 9. On the basis of the earlier work by Roff, it was expected that even during this period, there should be some measurable effects of peer rejection in the adjustment of these children to school and society. More extensive and detailed followup studies will be possible as this sample matures. However, the hypothesis of subsequent maladjustment related to peer rejection could be at least minimally tested in relation to such criteria as school dropout, as reflected in school records, and juvenile delinquency, as reflected in county and city police and juvenile bureau records. Some preliminary studies of this type were carried out and are reported in this section.

Developmental Processes Associated with Peer Acceptance-Rejection

The consistent exposure of significant correlates of peer acceptance-rejection related to family background and the identification of peer-rejected children as "nasty, mean, and antagonizing," led to some hypotheses concerning the developmental processes associated with peer acceptance-rejection and also with the subsequent maladjustment found by Roff and in the present study as a predictable sequel to early school peer rejection. To investigate these, Mr. Samuel H. Cox, who functioned as Project Director of the study at Texas Christian University, conducted an intensive analysis of 100 volunteer families in the Castleberry School District, a suburb of Fort Worth. These families were invited to participate on the basis of having a child who had been in the study for all four years and for whom extensive data had already been collected. Cox visited each home, administered a number of tests and questionnaires to both parents, and also conducted further extensive testing of the children. A condensed summary of his study appears in this section.

APPENDIX II

PEER CHOICE AND TEACHER RATING FORMS AND INSTRUCTIONS

CLASS ROLL (BOYS ONLY)

TEACHER'S NAME_________________________ SCHOOL NAME__________

SCHOOL SYSTEM____________________GRADE__________ROOM_________

(Please fill in the "nickname" column below if the student is known by other than his real name.)

FIRST	MIDDLE	LAST	"NICKNAME"	BIRTHDATE
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Form 1b

CLASS ROLL (GIRLS ONLY)

TEACHER'S NAME________________________ SCHOOL NAME______________

SCHOOL SYSTEM____________________ GRADE___________ ROOM________

(Please fill in the "nickname" column below if the student is known by other than her real name.)

FIRST	MIDDLE	LAST	"NICKNAME"	BIRTHDATE
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Form 2

TEXAS CHRISTIAN UNIVERSITY -
THE UNIVERSITY OF MINNESOTA
PEER RELATIONS AND PERSONALITY STUDY
TEACHERS' RATINGS INSTRUCTIONS

The Peer Relations Study is concerned with the relations of Peer Acceptance and Peer Rejection to personality development and adjustment. This phase of the research involves teacher evaluation of pupils's peer relations. Previous research has indicated that teachers' judgments of pupils' peer relations are generally one of the most valid sources of information. Please make your ratings carefully, following the instructions below.

Peer group acceptance and rejection are defined differently from adjustment. Children classified as accepted are those who have frequent, non-conflictful relations with other children. This may range from popularity and leadership to followership, even in low status roles. As long as a child is included in play groups and remains in communication with the others, he may be considered accepted to some degree.

Children who are disliked, ostracized, excluded, shunned and kept outside of their peer group are classified as rejected. In some cases these children may show no signs of maladjustment. However, if they are rejected by their peers, they should be so classified.

Rating Categories. Your ratings are to be made on the Teacher Rating Cards, which are yellow colored for boys and green colored for girls. In all other respects these cards are identical. Be careful to use the properly marked cards for these ratings. Each student is to be rated in one of the following seven categories which you think describes him or her best.

1. EXTREMELY HIGH - OUTSTANDING PEER RELATIONS. One of top boys (or girls) in class, an outstanding leader, best liked child in class, by both girls and boys, best accepted by other children.

2. EXTREMELY HIGH - SUPERIOR PEER RELATIONS. One of the most popular members of class, a strong leader, highly accepted by other children, well-liked by both boys and girls.

3. HIGH ACCEPTANCE AMONG PEERS. One of first chosen on playground, liked by most of the other children, has many friends, accepted by most of the children.

4. MODERATE ACCEPTANCE AMONG PEERS. Chosen about the middle by other children, a follower, but others like him (her), generally accepted; liked, but not to a high extent, not overly popular, but other children think he's ok.

5. LOW PEER RELATIONS. Merely tolerated, ignored by others, but not rejected, accepted by some, rejected by others, no close friends; not rejected but often overlooked, accepted by younger children, but not by own age group.

6. REJECTED GENERALLY BY PEERS. Rejected by most other children, picked on, teased, blamed for everything, others don't want him on their side, pushed out of group activities.

7. REJECTED ENTIRELY BY PEERS. Actively disliked, laughed at, made a fool of, scapegoat, blamed for everything, rejected by all children, both boys and girls, never included in any group activities.

Rating Cards

1. Handling of the cards. The cards should be handled very carefully. Bending or mutilating them in any way will interfere with machine operations. In particular, the edges should not be mutilated.

2. Marking. Make a long, heavy mark with the special pencil. Do not let the marks go outside the boxes.

Making the ratings. You have two name roster, one for Boys and one for Girls. The numbers before the names correspond to the columns on the card. Indicate your rating of each student by marking category 1 to 7 (the categories are defined on page two) in the column corresponding to the student's number.

Do this for each boy on the yellow card, and for each girl on the green card.

Number of Students in the Group. On the right end of the card are two columns labeled "No. of Students in This Group".

As an example, suppose there were 9 boys in your class. On the yellow card, you would mark the "0" box in the first of these columns and the "9" box in the second column.

Teachers Comments. For every student that you rate in category 6 or 7, please give an explanation comment on the attached Teacher's Comments Form. In this comment try to describe the child's peer relations and explain your rating.

If there are any other children, not in your class, whom you regard as peer rejected, as described by categories 6 or 7, please add their names and your comments concerning them. Be sure to give their teacher's name and their grade.

Use extra sheets, if necessary, to complete your comments.

Form 3

TEXAS CHRISTIAN UNIVERSITY
FORT WORTH 29, TEXAS

PEER RELATIONS STUDY

TEACHER'S COMMENTS

Date__________________

Teacher's Name__________________________ School__________________

School System__________________________ Grade__________ Class_____

TEXAS CHRISTIAN UNIVERSITY - UNIVERSITY OF MINNESOTA

PEER RELATIONS STUDY

Instructions to the Teacher for Administering the Rating Scale

Tell your students to put away all materials.

Pass out one special pencil, one card (blue cards for boys, pink cards to girls) and one name list to each student. (Make sure that boys receive boys' name lists and that girls receive girls' lists.)

If you have a student whose name does not appear on the appropriate lists, have your students enter that name on the lists, giving it the next consecutive number.

If you had a student who has dropped, have your students draw a line through that student's name and number on the name list only.

Read the following instructions to the class:

1. You have each received a name list (hold up the list), a card (hold up the card), and a special pencil (hold up the pencil).

2. Look at the name list. Find your own name on the list. Note the number just before your name. This is your number.

3. Now look at the card. The first two columns are labeled "Your Number."

   Suppose your number were 37. You would draw a heavy, straight line in the "3" box in the first column, and a heavy, straight line in the "7" box in the second column.

   Using your own number now, mark the first two columns in that manner. Make the line heavy, and make it the length of the box. Do not let the line go outside the box. (Give time for all to do this correctly.)

4. Look again at the name list. Draw a circle around your name and number. This is to remind you that in the steps to follow you are not to use your own number.

5. Now think of the person on the list whom you like most. Find his or her number on the list.

6. Find this number on the card, in the long row labeled "Like Most". (Hold up the card and indicate the row to the students.)

7. Put a heavy, straight, long line in the box just above this number. (Give time for all to do this.)

8. Now do the same thing for the next three persons on the list whom you like very much. (Give time for all to do this.)

9. Do the same thing for the two persons on the list whom you like least, but this time mark in the long row labeled "Like Least".

10. Now look closely at the card. Make sure that you have marked your number correctly.

11. Make sure that you have marked exactly four boxes in the "Like Most" row.

12. Make sure that you have marked exactly two boxes in the "Like Least" row.

13. Make sure that there are no pencil marks anywhere else on the card except for "Your Number", and "Like Most" and "Like Least".

14. Turn the card over and write your name and your teacher's name on the back.

End of instructions to students.

Please take up all materials. Check the cards carefully to make sure that each student's identification number is correct, that he has marked the correct number of responses on the card, and that he has not marked a box for which there is no student in your class.

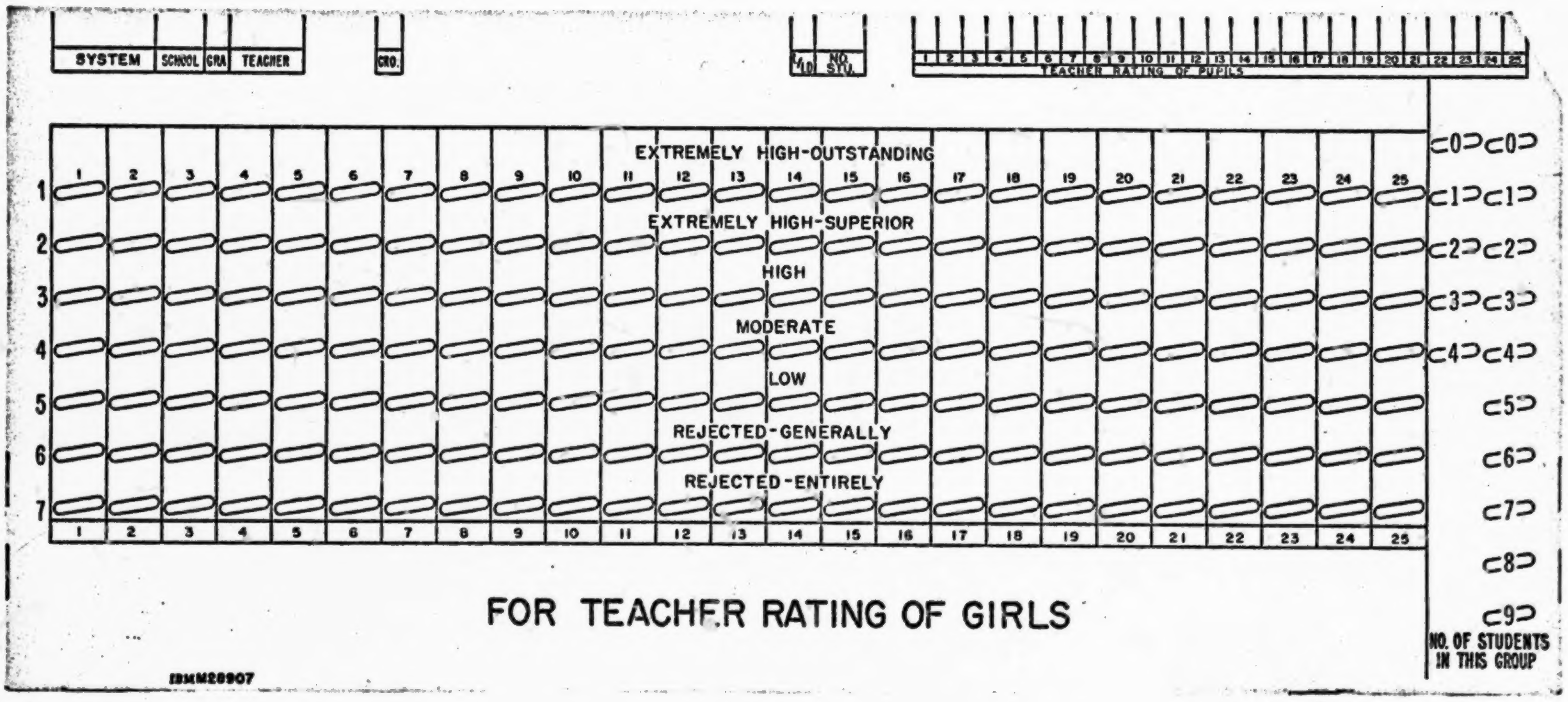
For each student who was absent during the administering of this scale, please mark-sense his or her number on an appropriately colored card. Include this card with the others.

Place the students cards in the properly marked envelope. Place this envelope and all other materials (except the pencils) back in the large envelope.

Place the pencils in the specially marked container.

Follow the instructions given by your local coordinator for turning in all materials.

TEACHER RATING CARDS



SYSTEM | SCHOOL | GRA | TEACHER

GRO.

1/10 | NO. STU.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

TEACHER RATING OF PUPILS

1 EXTREMELY HIGH-OUTSTANDING

2 EXTREMELY HIGH-SUPERIOR

3 HIGH

4 MODERATE

5 LOW

6 REJECTED-GENERALLY

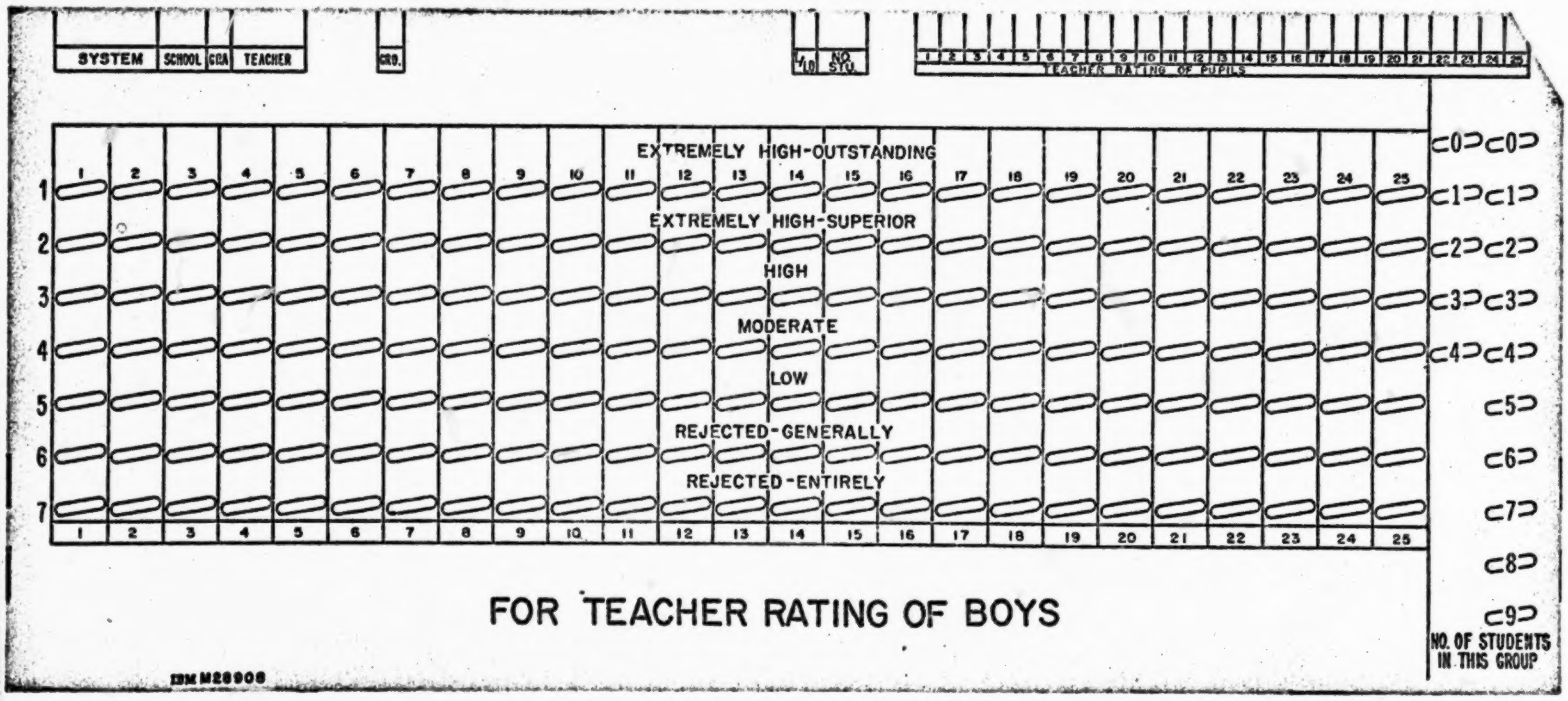
7 REJECTED-ENTIRELY

0 1 2 3 4 5 6 7 8 9

NO. OF STUDENTS IN THIS GROUP

FOR TEACHER RATING OF GIRLS

IBM M28907



SYSTEM | SCHOOL | GRA | TEACHER

GRO.

1/10 | NO. STU.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

TEACHER RATING OF PUPILS

1 EXTREMELY HIGH-OUTSTANDING

2 EXTREMELY HIGH-SUPERIOR

3 HIGH

4 MODERATE

5 LOW

6 REJECTED-GENERALLY

7 REJECTED-ENTIRELY

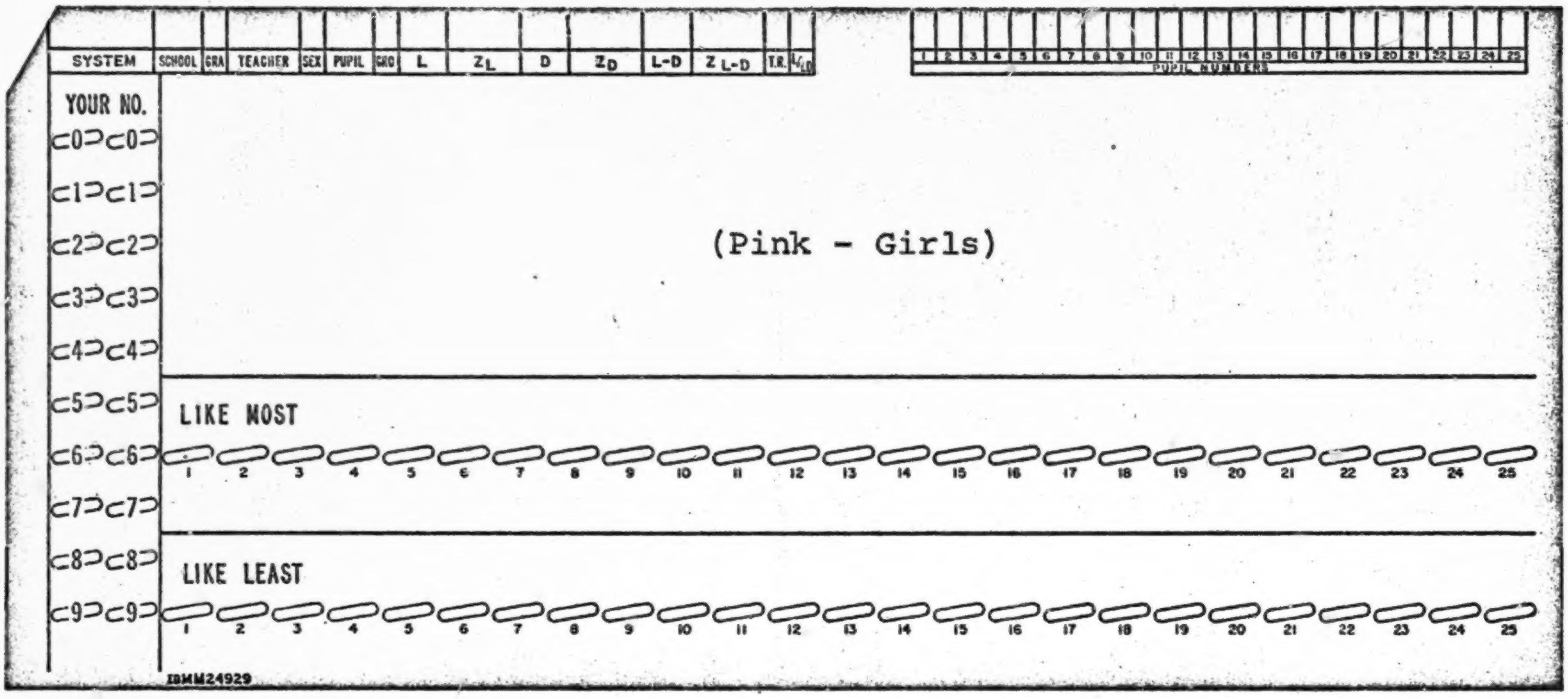
0 1 2 3 4 5 6 7 8 9

NO. OF STUDENTS IN THIS GROUP

FOR TEACHER RATING OF BOYS

IBM M28908

PEER NOMINATION CARD



SYSTEM	SCHOOL	GRA	TEACHER	SEX	PUPIL	GRO	L	Z_L	D	Z_D	L-D	Z_{L-D}	T.R.	L/LD

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

PUPIL NUMBERS

YOUR NO.

⊂0⊃⊂0⊃
⊂1⊃⊂1⊃
⊂2⊃⊂2⊃
⊂3⊃⊂3⊃
⊂4⊃⊂4⊃
⊂5⊃⊂5⊃
⊂6⊃⊂6⊃
⊂7⊃⊂7⊃
⊂8⊃⊂8⊃
⊂9⊃⊂9⊃

(Pink - Girls)

LIKE MOST

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

LIKE LEAST

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

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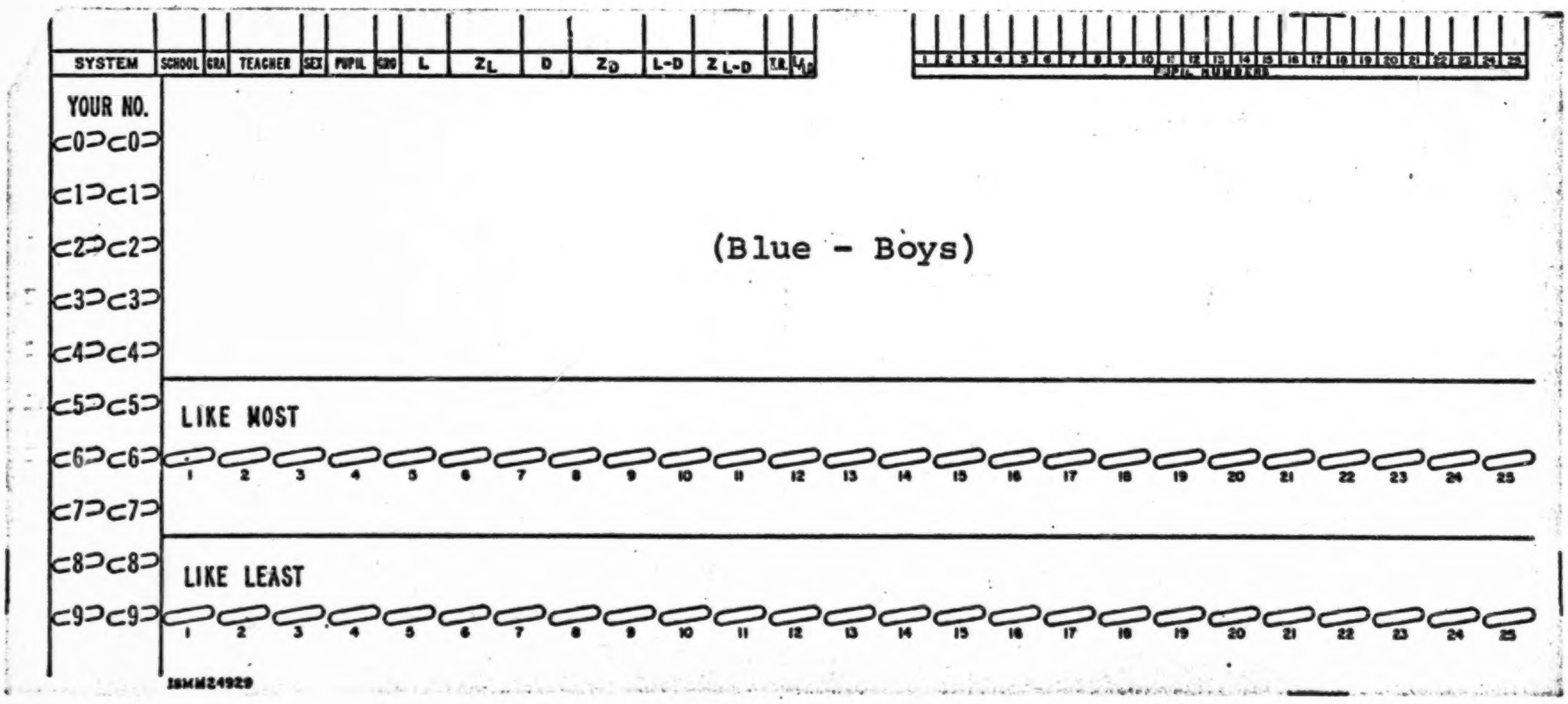

SYSTEM	SCHOOL	GRA	TEACHER	SEX	PUPIL	GRO	L	Z_L	D	Z_D	L-D	Z_{L-D}	T.R.	L/LD

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

PUPIL NUMBERS

YOUR NO.

⊂0⊃⊂0⊃
⊂1⊃⊂1⊃
⊂2⊃⊂2⊃
⊂3⊃⊂3⊃
⊂4⊃⊂4⊃
⊂5⊃⊂5⊃
⊂6⊃⊂6⊃
⊂7⊃⊂7⊃
⊂8⊃⊂8⊃
⊂9⊃⊂9⊃

(Blue - Boys)

LIKE MOST

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

LIKE LEAST

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

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CHAPTER III

METHODOLOGICAL CONSIDERATIONS IN THE ESTIMATION OF PEER ACCEPTANCE-REJECTION

III METHODOLOGICAL CONSIDERATIONS IN THE ESTIMATION OF PEER ACCEPTENCE-REJECTION

The basic measures of peer acceptance-rejection employed throughout this study were two peer choice scores, Like Most (LM) and Like Least (LL) and a rating of peer-relations effectiveness performed by teachers and referred to as the Teacher Rating (TR). Detailed descriptions of these measures and of scores derived from them have been presented in Chapter II. The methodological studies reported in this chapter provide further description of the measures in relation to their reliability, stability over the four years of the Study, and their interrelations. This chapter also includes reports of research on several methodological issues related to the interpretation and combination of peer relations scores as well as an analysis of the incidence of peer rejection in the elementary school population.

The studies included are reported in a logical organization which is different from the order in which the analyses were performed. Some are based on the total samples available, while others involved smaller samples, employed when the stability of results, judged importance of the particular analysis, or cost indicated that such sampling would be justified. While the major analyses were replicated in the two states, a number of minor and exploratory studies were carried out with data from one area and not replicated at the time of this report.

DISTRIBUTIONS OF PEER RATING AND TEACHER RATING SCORES

Distributions of the peer rating and teacher rating scores for Year I data of the Texas sample and part of the Minnesota sample (St. Paul) available at the time were presented by Sells and Roff at the 1963 meeting of the American Educational Research Association (AERA) and published in condensed form the following year (Sells and Roff, 1964a). Subsequently, these tables were revised to include the 6616 Year I cases obtained in Minneapolis, where a revised 7-point scale was used for TR, and the augmented distributions, which are essentially unchanged except for TR, are presented here.

Tables 18 through 21 show the distributions for LM, LL, LD, and TR, respectively. To facilitate their comprehension, the combined distributions are summarized in Table 22 in percentage form. These tables present the scores in intervals of standard deviation from the mean, although in the

Table 18. Frequency distributions of LM (Like Most) Peer Choice scores for Texas, Minnesota and Combined Year I samples.

z-score interval*		Obtained Frequencies			Percentage Frequencies		
		Texas	Minn.	Total	Texas	Minn.	Total
3.0	3.4	19	27	46	.10	.15	.12
2.5	2.9	117	133	250	.61	.74	.67
2.0	2.4	553	496	1049	2.90	2.75	2.82
1.5	1.9	1224	1112	2336	6.42	6.16	6.28
1.0	1.4	1806	1557	3363	9.48	8.63	9.05
.5	.9	2097	2066	4163	11.00	11.45	11.20
0.0	.4	3284	3072	6356	17.24	17.02	17.10
-.1	-.5	3210	3095	6305	16.85	17.15	16.96
-.6	-1.0	4646	4304	8950	24.38	23.84	24.08
-1.1	-1.5	1905	1972	3877	9.99	10.92	10.43
-1.6	-2.0	184	208	392	.96	1.15	1.05
-2.1	-2.5	9	7	16	.05	.04	.04
TOTAL		19054	18049	37103			

*In units of standard deviation

Table 19. Frequency distributions of LL (Like Least) Peer Choice scores for Texas, Minnesota and Combined Year I samples.

z-score interval*		Obtained Frequencies			Percentage Frequencies		
		Texas**	Minn.	Total	Texas	Minn.	Total
2.0	2.4	3	0	3	.02	.00	.01
1.5	1.9	39	38	77	.22	.21	.22
1.0	1.4	1191	1268	2459	6.88	7.02	6.94
.5	.9	6029	6162	12191	34.82	34.14	34.38
0.0	.4	4434	4362	8796	25.62	24.17	24.80
-.1	-.5	1752	2181	3933	10.12	12.08	11.09
-.6	-1.0	1308	1381	2689	7.56	7.65	7.58
-1.1	-1.5	925	951	1876	5.34	5.27	5.29
-1.6	-2.0	655	715	1370	3.78	3.96	3.86
-2.1	-2.5	537	707	1244	3.10	3.92	3.51
-2.6	-3.0	302	200	502	1.74	1.11	1.42
-3.1	-3.5	112	70	182	.65	.39	.51
-3.6	-4.0	23	13	36	.13	.07	.10
-4.1	-4.5	0	1	1	.00	.01	.00
TOTAL		17310	18049	35359			

---

* In units of standard deviation

**Like Least ratings were not available for 1778 pupils in one Texas city.

Table 20. Frequency distribution of LD (Like Most minus Like Least) Peer Choice scores for Texas, Minnesota and Combined Year I samples.

z-score		Obtained Frequencies			Percentage Frequencies		
interval*		Texas**	Minn.	Total	Texas	Minn.	Total
3.0	3.4	1	1	2	.01	.01	.01
2.5	2.9	19	26	45	.11	.14	.13
2.0	2.4	159	194	353	.92	1.08	1.00
1.5	1.9	855	881	1736	4.94	4.88	4.90
1.0	1.4	1960	1914	3874	11.32	10.60	10.92
.5	.9	2840	2977	5817	16.41	16.49	16.40
0.0	.4	3844	3961	7805	22.21	21.94	22.01
-.1	-.5	3065	3254	6319	17.71	18.03	17.82
-.6	-1.0	2142	2282	4424	12.37	12.64	12.48
-1.1	-1.5	1240	1359	2599	7.16	7.53	7.33
-1.6	-2.0	761	760	1521	4.40	4.21	4.29
-2.1	-2.5	337	391	728	1.95	2.17	2.05
-2.6	-3.0	80	44	124	.46	.24	.35
-3.1	-3.5	7	5	12	.04	.03	.03
TOTAL		17310	18049	35359			

---

* In units of standard deviation

**Like Least ratings were not available for 1778 pupils in one Texas city.

Table 21. Frequency distribution of TR (Teacher Rating) scores for Texas, Minnesota and Combined Year I samples.

		Obtained Frequency			Minneapolis	Percentage Frequencies			
z-score interval*		Texas	St. Paul	Total**	7-point scale	Texas	St. Paul	Total**	Minneapolis
		4-point scales							
2.5	2.9				3				.05
2.0	2.4	24	3	27	70	.13	.03	.19	1.10
1.5	1.9	251	219	740	329	2.73	1.92	2.43	4.97
1.0	1.4	2772	2038	4810	515	14.55	17.83	15.78	7.78
.5	.9	1709	598	2307	983	8.97	5.23	7.57	14.86
0.0	.4	4009	3755	7764	1207	21.04	32.84	25.47	18.24
-.1	-.5	6252	2115	8635	1915	34.22	18.50	28.32	28.94
-.6	-1.0	1582	1172	2754	949	8.30	10.25	9.03	14.34
-1.1	-1.5	1084	988	2072	479	5.69	8.64	6.80	7.24
-1.6	-2.0	532	401	933	143	2.79	3.51	3.06	2.16
-2.1	-2.5	216	127	343	23	1.13	1.11	1.13	.35
-2.6	-3.0	73	12	85		.38	.10	.28	
-3.1	-3.5	9	4	13		.05	.03	.04	
-3.6	-4.0	3	1	4		.02	.01	.01	
TOTAL		19054	11433	30487	6616				

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* In units of standard deviation

**Totals refer to Texas and St. Paul only; Minneapolis Teacher Ratings were on a 7-point scale, Texas and St. Paul Teacher Ratings were on a 4-point scale.

Table 22. Percentage distributions of total sample for LM, LL, LD, and TR scores. Year I, total sample.

z-score interval*		Like Most	Like Least	Like Most-Like Least	Teacher Ratings (4-point scale	Teacher Ratings (7-point scale)
3.0	3.4	.12		.01		
2.5	2.9	.67		.13		.05
2.0	2.4	2.82	.01	1.00	.19	1.10
1.5	1.9	6.28	.22	4.90	2.43	4.97
1.0	1.4	9.05	6.94	10.92	15.78	7.78
.5	.9	11.20	34.38	16.40	7.57	14.86
0.0	.4	17.10	24.80	22.01	25.47	18.24
-.1	-.5	16.96	11.09	17.82	28.32	28.94
-.6	-1.0	24.08	7.58	12.48	9.03	14.34
-1.1	-1.5	10.43	5.29	7.33	6.80	7.24
-1.6	-2.0	1.05	3.86	4.29	3.06	2.16
-2.1	-2.5	.04	3.51	2.05	1.13	.35
-2.6	-3.0		1.42	.35	.28	
-3.1	-3.5		.51	.03	.04	
-3.6	-4.0		.10		.01	
-4.1	-4.5		.00			
1.0	3.4	18.94	7.17	16.96	18.40	13.90
-1.0	.9	69.34	77.85	68.71	70.39	76.38
-1.1	-4.5	11.52	14.69	14.05	11.32	9.75

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*In units of standard deviation

computations a constant of 5 was added to all scores to eliminate negative values. The distributions were designed to have a mean of 5.0 and a standard deviation of 1.0.

The first four tables present obtained frequencies in the columns at the left, for total Texas, Minnesota, and combined samples, and relative frequencies in percentage form, at the right. Breakdowns by grade and sex are not included, but variations related to them are discussed in the text. LL scores were reflected in sign to afford consistent interpretation of all peer-score measures. Teacher ratings on 4-point and 7-point scales are listed separately.

The z-score sets were designed to have a mean of 5.0 and standard deviation of 1.0 and an empirical check showed that these were obtained within the limits of rounding error for approximate computation. However, it should be remembered that whereas peer choices were made within class-groups of like sex, Teacher Ratings were made for the entire class by one rater, the teacher. Thus, while the means and standard deviations of Teacher Ratings are 5.0 and 1.0, respectively, for distributions of boys and girls combined, the means for boys tend to be slightly lower and for girls, slightly higher than the prescribed mean, as a result of sex-bias, discussed later.

Examination of Tables 18 through 22 reveals that the Texas and Minnesota peer choice scores are distributed nearly identically, but that this agreement does not hold for the ratings by teachers. In view of the similarity of the peer choice distributions, it is apparent that the Texas and St. Paul teachers used different subjective judgment scales in interpreting what were intended to be straightforward rating instructions. The Texas teachers reported relatively less maladjustment in peer relations and this must be taken into account in interpreting the results.

The four combined distributions are compared in Table 22, which summarizes the per cents of cases in each class intervals. The variations among these distributions are emphasized by the summary figures at the bottom of this table, which report the per cents under the curve at intervals of plus and minus one standard deviation from the mean. In a normal distribution, these would be 15.87, 68.26, and 15.87 per cent, respectively. As Table 22 shows, high liking (acceptance) is overestimated on the LM scale and underestimated on the LL scale, while high "dislike" (rejection) is underestimated on both these scales, but only slightly on the LL scale. The difference scale (LD) is slightly skewed toward the negative extreme, but is more symmetrical and approximates the normal distribution. The TR distribution on the 4-point scale is skewed toward the negative extreme and tends toward bimodality, while the distribution on the 7-point scale is smoother and closer to the normal curve.

RELIABILITY STUDIES OF PEER ACCEPTANCE-REJECTION SCORES

Split-half reliability coefficients, corrected by the Spearman-Brown Prophecy Formula, were computed to estimate the reliability of peer choice scores for each year, as reported below. The sample in this study consisted of all pupils in the districts of both states that participated for four years. Reliability of Teacher Ratings was estimated by correlating the ratings obtained at a regularly scheduled rating period, for a sample of classes, with repeat ratings of the same classes by the same teachers several months later. The consistency of both peer scores and teacher ratings, from year to year, which is reported later in this Chapter, was estimated by correlating corresponding scores of individuals who continued in the study.

SPLIT-HALF RELIABILITY OF PEER RATINGS

The reliability study was based on a total sample of 25,975 ratings, divided approximately evenly by boys and girls, over the four rating years. The samples, by year, were 9907, 7439, 5932, and 2697, respectively, for the four years. Administrative arrangements in Minnesota precluded followup in junior high schools. As a result, the classes lost through promotion to grade 7 accounted for most of the drop in the last three years. There was also a loss at grade 7 in the Texas sample in Year II, when administrative arrangements for followup in the seventh grade were inadequate. In addition, there was some natural attrition throughout the junior high range.

The analytic procedure was as follows. For each class-group in the samples included, two "split-half" z-scores were computed for each boy and girl for both LM and LL ratings. These were based on a division of the class-group into approximate halves, composed of odd- and even-numbered pupils in the class-group rosters. These z-scores were computed by the standard methods, using the regular computing programs developed for z-score computation, including adjustments for small samples. Correlations between the scores for the odd- and even-numbered samples were computed for each class-group and combined for grade-sex subsamples by school district. These district subsamples form the smallest units for reporting reliability of the LM and LL scores in Table 23. Reliability coefficients were not computed for the derived LD score, which would be substantially higher than those for the component ratings. All split-half correlation coefficients were corrected by the Spearman-Brown formula to estimate reliabilities.

Table 23 summarizes the results, presenting the corrected reliability coefficients by year, for the subsamples of each state. It includes a breakout of a Negro subsample in the four-year sample, for comparison with the remaining data. Table 23 reports, for each year-grade set, arranged by year, the results for the subsamples in that category, giving the number of district subsamples included, the total number of pupils, and the high, low, and mean LM and LL reliability coefficients of the respective boy and girl sets, separately.

Overall, the median corrected, split-half reliability of the pupil peer scores exceeds .6 for LM and .7 for LL. The following discussion considers variations of reliability

Table 23. Split-Half reliability estimates of LM and LL scores by Grade, Sex, and Race.

					Reliability Coefficients					
			No. Dist.	No.	LM			LL		
Year	Grade	Sex	Subsamples	Pupils	Low	High	Aver.	Low	High	Aver.
				TEXAS NEGRO CHILDREN						
I	3	B	1	47	-	-	.67	-	-	.78
1962	3	G	1	43	-	-	.57	-	-	.82
	4	B	1	38	-	-	.73	-	-	.76
	4	G	1	35	-	-	.70	-	-	.66
	5	B	1	41	-	-	.72	-	-	.72
	5	G	1	44	-	-	.67	-	-	.80
	6	B	1	36	-	-	.76	-	-	.78
	6	G	1	43	-	-	.49	-	-	.45
	All	B	1	162	-	-	.72	-	-	.76
	All	G	1	165	-	-	.61	-	-	.71
II	4	B	1	46	-	-	.67	-	-	.73
1964	4	G	1	40	-	-	.61	-	-	.82
	5	B	1	35	-	-	.85	-	-	.58
	5	G	1	38	-	-	.73	-	-	.63
	6	B	1	35	-	-	.43	-	-	.68
	6	G	1	42	-	-	.47	-	-	.56
	All	B	1	116	-	-	.68	-	-	.67
	All	G	1	120	-	-	.60	-	-	.68
III	5	B	1	42	-	-	.29	-	-	.39
1964	5	G	1	44	-	-	.30	-	-	.58
	6	B	1	35	-	-	.76	-	-	.72
	6	G	1	38	-	-	.73	-	-	.68
	All	B	1	77	-	-	.55	-	-	.56
	All	G	1	82	-	-	.54	-	-	.62
IV	6	B	1	41	-	-	.69	-	-	.47
1965	6	G	1	39	-	-	.55	-	-	.14

Table 23 (cont.)

					Reliability Coefficients					
					LM			LL		
Year	Grade	Sex	No. Dist. Subsamples	No. Pupils	Low	High	Aver.	Low	High	Aver.
				TEXAS WHITE CHILDREN						
I	3	B	4	380	.70	.81	.74	.32	.73	.63
1962	3	G	4	362	.59	.68	.64	.31	.69	.61
	4	B	4	418	.70	.81	.71	.68	.73	.75
	4	G	4	380	.47	.73	.66	.69	.78	.74
	5	B	4	349	.66	.82	.76	.12	.79	.70
	5	G	4	361	.53	.70	.66	.75	.88	.79
	6	B	4	343	.53	.81	.72	.73	.81	.76
	6	G	4	336	.64	.75	.71	.51	.82	.70
	All	B	4	1490	.68	.77	.73	.65	.76	.72
	All	G	4	1439	.59	.71	.66	.59	.78	.71
II	4	B	4	391	.65	.79	.72	.63	.78	.71
1963	4	G	4	361	.59	.78	.66	.64	.85	.72
	5	B	4	414	.60	.81	.74	.58	.76	.71
	5	G	4	396	.55	.78	.66	.66	.82	.74
	6	B	4	371	.55	.73	.68	.55	.79	.73
	6	G	4	382	.53	.58	.58	.57	.78	.73
	7	B	1	64	-	-	.66	-	-	.71
	7	G	1	62	-	-	.58	-	-	.67
	All	B	4	1240	.63	.73	.71	.70	.71	.71
	All	G	4	1201	.56	.67	.63	.67	.80	.73
III	5	B	4	399	.53	.72	.70	.51	.80	.74
1964	5	G	4	363	.42	.71	.62	.40	.83	.71
	6	B	4	395	.56	.72	.66	.62	.80	.74
	6	G	4	399	.49	.75	.75	.58	.80	.76
	7	B	3	306	.67	.71	.69	.72	.93	.81
	7	G	3	301	.36	.64	.54	.78	.87	.82
	8	B	3	296	.48	.62	.51	.55	.75	.71
	8	G	3	265	.39	.58	.51	.74	.84	.81
	All	B	4	1396	.61	.67	.65	.61	.77	.76
	All	G	4	1328	.52	.66	.61	.61	.81	.78
IV	6	B	4	431	.63	.80	.71	.45	.80	.72
1965	6	G	4	386	.55	.66	.60	.54	.77	.71
	7	B	3	322	.65	.69	.66	.61	.90	.76
	7	G	3	335	.59	.63	.60	.76	.83	.80
	8	B	3	288	.61	.66	.64	.69	.83	.75
	8	G	3	288	.32	.70	.59	.61	.83	.68
	9	B	3	306	.57	.65	.60	.65	.74	.67
	9	G	3	261	.12	.46	.38	.66	.73	.71
	All	B	4	1347	.63	.70	.66	.45	.80	.72
	All	G	4	1270	.49	.66	.55	.54	.75	.69

Table 23 (cont.)

Year	Grade	Sex	No. Dist. Subsamples	No. Pupils	Reliability Coefficients					
					LM			LL		
					Low	High	Aver.	Low	High	Aver.
TEXAS WHITE AND NEGRO CHILDREN COMBINED										
I	3	B	4	427	.70	.81	.73	.32	.73	.65
1962	3	G	4	405	.59	.68	.64	.54	.69	.64
	4	B	4	456	.70	.81	.71	.68	.73	.75
	4	G	4	415	.47	.73	.66	.67	.73	.73
	5	B	4	390	.69	.82	.76	.41	.79	.70
	5	G	4	405	.53	.70	.66	.77	.88	.79
	6	B	4	379	.53	.81	.72	.73	.81	.76
	6	G	4	379	.59	.75	.69	.49	.82	.68
	All	B	4	1652	.68	.77	.73	.65	.76	.72
	All	G	4	1604	.59	.71	.66	.63	.78	.71
II	4	B	4	437	.65	.79	.72	.63	.78	.71
1963	4	G	4	401	.59	.78	.66	.64	.85	.73
	5	B	4	449	.60	.81	.75	.58	.76	.70
	5	G	4	434	.55	.78	.67	.66	.82	.73
	6	B	4	406	.55	.73	.66	.55	.79	.73
	6	G	4	424	.53	.58	.57	.57	.78	.72
	7	B	1	64	-	-	.66	-	-	.71
	7	G	1	62	-	-	.58	-	-	.67
	All	B	4	1356	.63	.73	.71	.70	.71	.71
	All	G	4	1321	.56	.67	.63	.67	.80	.73
III	5	B	4	441	.56	.72	.67	.61	.80	.72
1964	5	G	4	407	.50	.71	.59	.40	.83	.70
	6	B	4	430	.56	.72	.67	.62	.80	.74
	6	G	4	437	.49	.75	.70	.58	.80	.75
	7	B	3	306	.67	.71	.69	.72	.93	.81
	7	G	3	301	.36	.64	.55	.78	.87	.82
	8	B	3	296	.48	.62	.51	.55	.75	.71
	8	G	3	265	.39	.58	.51	.74	.84	.81
	All	B	4	1473	.61	.67	.65	.61	.77	.75
	All	G	4	1410	.52	.66	.61	.61	.81	.77
IV	6	B	4	472	.60	.80	.71	.45	.80	.70
1965	6	G	4	425	.55	.66	.59	.57	.77	.68
	7	B	3	322	.65	.69	.66	.61	.90	.76
	7	G	3	335	.59	.63	.60	.76	.83	.80
	8	B	3	288	.61	.66	.64	.69	.83	.75
	8	G	3	288	.32	.70	.59	.61	.83	.68
	9	B	3	306	.57	.65	.60	.65	.74	.67
	9	G	3	261	.12	.46	.38	.66	.73	.71
	All	B	4	1388	.63	.70	.66	.45	.80	.72
	All	G	4	1309	.49	.66	.55	.71	.75	.72

Table 23 (cont.)

					Reliability Coefficients					
					LM			LL		
Year	Grade	Sex	No. Dist. Subsamples	No. Pupils	Low	High	Aver.	Low	High	Aver.
				MINNESOTA SAMPLE						
I	3	B	2	839	.63	.63	.63	.56	.61	.59
1962	3	G	2	782	.69	.72	.71	.67	.67	.67
	4	B	2	806	.61	.66	.64	.65	.72	.69
	4	G	2	742	.63	.74	.69	.68	.75	.72
	5	B	2	719	.63	.67	.65	.75	.75	.75
	5	G	2	792	.65	.70	.67	.71	.75	.73
	6	B	2	1012	.60	.62	.61	.67	.80	.75
	6	G	2	959	.59	.64	.60	.72	.73	.73
	All	B	2	3376	.62	.64	.63	.66	.73	.70
	All	G	2	3275	.64	.69	.67	.70	.72	.71
II	4	B	2	754	.61	.73	.68	.60	.66	.63
1963	4	G	2	715	.67	.73	.71	.62	.65	.64
	5	B	2	804	.73	.74	.74	.74	.76	.75
	5	G	2	747	.65	.66	.66	.71	.75	.73
	6	B	2	841	.63	.70	.67	.71	.78	.76
	6	G	2	901	.61	.71	.66	.73	.80	.77
	All	B	2	2399	.67	.72	.70	.69	.74	.72
	All	G	2	2363	.64	.70	.68	.69	.74	.72
III	5	B	2	737	.54	.58	.56	.65	.72	.69
1964	5	G	2	702	.54	.59	.56	.69	.69	.69
	6	B	2	815	.62	.65	.65	.74	.75	.74
	6	G	2	795	.56	.66	.62	.71	.84	.79
	All	B	2	1552	.57	.63	.61	.70	.73	.72
	All	G	2	1497	.58	.58	.58	.70	.77	.74

coefficients in relation to type of measure, region, grade, race, and sex. Although the range of variation is not great, the influence of these sources is quite interesting.

Reliability Variations Related to Measure

Although based on two nominations per class-group, as compared with four for the LM ratings, the reliability of the LL measures, across states, grades, and sexes, exceeds that of LM in most comparisons, the only exception being for small sample of Negro girls in the elementary grades (3 to 6), in which the results appear to be atypical. It thus appears that peer choice status or popularity based on negative, Like Least choices, is determined somewhat more reliably than such status based on positive, Like Most choices. In other words, the population represented in this study tends to agree somewhat more on the identification of disliked than of liked persons. This difference appears to increase with age and is most pronounced at the junior high level, despite the fact that the organization of junior high classes favors less reliable judgments, as discussed below.

Reliability Variations Related to Region

Since the Minnesota sample covered only elementary grades (3 through 6) and a Negro sample was not identified as such, the appropriate comparison is between the Texas White sample and the Minnesota sample for the elementary grades. The average reliability coefficients for this comparison are as follows:

	Texas	Minnesota
Boys LM	.71	.65
Boys LL	.72	.71
Girls LM	.65	.65
Girls LL	.72	.71

These results are quite comparable, although the reliability of the LM ratings is slightly higher for the Texas boys' sample than for the comparable Minnesota group.

Reliability Variations Related to School Grade

Junior high scores were available only in the Texas sample. For this sample, the junior high reliabilities are highest on LL, for both sexes and among the lowest on LM. In the elementary grades, classes generally remain together for the entire curriculum, while they are departmentalized in junior high school. On the basis of amount of contact, it might therefore be expected that peer choices among homeroom class-groups would be less reliable in junior high than in elementary classes. However, this was not the case, at least for the LL reliabilities, which averaged .75 for junior high girls and .74 for junior high boys, higher than for any other grade groups.

Although the LM reliabilities of junior high students, .53 for girls and .63 for boys, average lowest among all groups, the hypothesis that class organization had a uniformly depressing effect on reliability is unsupported, while the *post hoc* interpretation that a differential orientation occurs as a function of age, in which judgments of disliking become more stable and those of liking, less stable, appears better to account for the results obtained. This observation is generally supported by the trend of changes in reliability coefficients over the range of grades from 3 to 9, which, while not great in magnitude (the changes are essentially within the range of .6 to .8), are nevertheless in the directions indicated.

Reliability Variations Related to Race

The Negro sample consisted of 162 elementary school boys and 165 elementary school girls in one Texas school district studied over four years, but since no provisions for followup beyond grade 6 could be made, it declined in number to 41 boys and 39 girls in grade 6 in the fourth year. Although the sample size is small, it is noteworthy that the reliability of the boys' sample on LM compares favorably with that of the Texas White and Minnesota samples, while the reliability of the girls' LL score is higher than that of White junior high girls. The average reliabilities of Negro boys and girls on LL are lower than those of all other groups, but these averages reflect the unusually low coefficients for both sexes in grade 5 for 1964, which are atypical and may be the result of an error in administration, recording, or processing of the data. If these results were omitted, no significant or systematic differences appear to be present.

Reliability Variations Related to Sex

No systematic, significant sex differences related to the reliability of the peer choice scores were found, although girls had a greater number of coefficients exceeding .8 on LL.

Summary

The median reliability of the peer choice scores, estimated by split-half procedures and corrected by the Spearman-Brown formula, exceeds .6 for LM and .7 for LL. There is a tendency for LM reliability to decline with grade (age) and for LL reliability to increase. This trend was most marked in the junior high grades, which were available only in the Texas sample. No systematic, significant differences in reliability were found to be related to region, race, or sex.

RELIABILITY OF TEACHER RATINGS

Comparison of Four-Point and Seven-Point Scales

As mentioned earlier, the four-point scale, employed during the first year, in the Texas and St. Paul surveys, was abandoned in favor of a seven-point Teacher Rating scale thereafter. The two scales were as follows:

Four-Point Scale

1. Exceptionally Good Peer Relations
2. Average, No Negative Indications
3. Borderline Rejection
4. Clearly Rejected

Seven-Point Scale

1. Extremely High-Outstanding Peer Relations
2. Extremely High-Superior
3. High
4. Moderately Good
5. Low
6. Rejected Generally
7. Rejected Entirely

After examination of raw score distributions of the first-year, four-point scale ratings, it was felt that they were not sufficiently differentiated and that greater variability would be obtained with the new scale. Table 24 compares raw score distributions of 9676 Teacher Ratings for ten Texas School Districts in Year I with 8467 comparable ratings for the same districts in Year II. It may be noted that in Year II five of the seven scale points were used for at least five per cent of the ratings, whereas in Year I

Table 24. Comparison of raw score distributions of Teacher Ratings for 10 school districts. Year I and Year II, Texas Sample

Rating		N	Per cent
Year I (Four-Point Scale)			
1. Exceptionally good peer relations		2751	28.4
2. Average, no negative indications		5772	59.7
3. Borderline rejection		976	10.1
4. Clearly rejected		177	1.8
	Total	9676	100.0
	Mean	1.85	
	S.D.	.66	
Year II (Seven-Point Scale)			
1. Extremely High-Outstanding		434	5.1
2. Extremely High-Superior		996	11.8
3. High		2183	25.8
4. Moderate		3511	41.5
5. Low		1198	14.1
6. Rejected-Generally		116	1.4
7. Rejected-Entirely		29	0.3
	Total	8467	100.0
	Mean	3.53	
	S.D.	1.09	

only three of the four scale points were effectively employed.

Repeat Reliability Analysis

Since the seven-point scale was used following year one, the reliability analysis of Teacher Ratings was based on this scale. Each child received only one TR in each year and the only available method of assessing TR reliability required repeat ratings after a period of time. Although such ratings were an added burden to the classroom teachers, arrangements were made in five Texas school districts for second ratings, approximately five months after the regular 1964 survey, with a summer vacation intervening between initial and repeat ratings.

In preparation for the second ratings a questionnaire was sent to the 108 teachers participating and it was ascertained, (a) that none of the teachers had employed sociometric devices in class that might have biased their ratings, and (b) that all teachers felt that they knew the pupils on their class lists well enough to rate them at the time of the second rating, even though most of them were no longer in these teachers' classes. Reratings were made on 377 boys and 352 girls by 25 men teachers and on 1209 boys and 1114 girls by 78 women teachers.

For purposes of analysis, the data were divided into eight groups, consisting of elementary and junior high boys and girls rated by men teachers and by women teachers. One man teacher and two women teachers rated junior high boys only, three women teachers rated elementary boys only, and two women teachers rated junior high girls only. The remaining 100 teachers, who rated both boys and girls, were divided as follows: Men: elementary, 9 and junior high, 15; Women: elementary, 48 and junior high, 28. Table 25 shows the number of teachers rating each group and the number of reliability coefficients computed for the eight groups, which totaled 208. The distributions of these 208 coefficients for the eight groups are shown in Table 26 and a breakdown by school district is given in Table 27.

As might be expected, the range of individual teacher-group reliability coefficients in Table 26 is great, although entirely within the positive domain. However the pooled results for teachers in each group, represented by the weighted average and median coefficients, indicate substantial reliability, comparable with that obtained for the peer ratings, LM and LL. The range of coefficients reported by group by district in Table 27 is not as great, reflecting

Table 25. Summary of teachers participating in the rerating study.

Teacher Category	Number of Teachers	Number of Reliability Coefficients
Elementary Men Rating Boys and Girls	9	18
Jr. High Men Rating Boys and Girls	15	30
Jr. High Men Rating Boys only	1	1
Subtotal Men Teachers	25	49
Elementary Women Rating Boys and Girls	48	96
Elementary Women Rating Boys only	3	3
Jr. High Women Rating Boys and Girls	28	56
Jr. High Women Rating Boys only	2	2
Jr. High Women Rating Girls only	2	2
Subtotal Women Teachers	83	159
Totals	108	208

Table 26. Distribution of test-retest reliability coefficients for men and women teachers rating boys and girls in elementary and junior high school groups.

	Elementary School				Junior High School				
	Men Teachers		Women Teachers		Men Teachers		Women Teachers		
Reliability Coefficient	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total r's
.9 - 1.0	1	1	3	2	1	1	4	5	18
.80 - .89	1	1	17	17	5	4	6	5	56
.70 - .79	1	1	8	14	3	4	7	10	48
.60 - .69	1	2	6	3	3	2	3	2	22
.50 - .59	3	1	6	5	2	0	5	1	23
.40 - .49	0	1	4	1	1	0	4	3	14
.30 - .39	1	0	3	0	0	0	1	0	5
.20 - .29	0	2	4	3	1	1	0	1	12
.10 - .19	1	0	0	2	0	0	0	0	3
below .1	0	0	0	1	0	3	0	3	7
Number of Coefficients	9	9	51	48	16	15	30	30	208
Average Reliability	.67	.66	.72	.74	.74	.64	.72	.73	.72
Median Reliability	.58	.66	.72	.75	.70	.70	.72	.75	.73

Table 27. Test-retest reliability of teacher ratings for men and women teachers rating boys and girls by school district. Texas Year III Sample.

	Men Teachers						Women Teachers					
School	Number of			Number of			Number of			Number of		
District	T	Boys	r	T	Girls	r	T	Boys	r	T	Girls	r
					Elementary Grades (5 and 6)							
Everman	1	13	.93	1	15	.55	4	65	.77	4	63	.77
Bonham	2	34	.70	2	27	.73	7	127	.61	7	104	.73
McKinney	0			0			13	189	.67	12	159	.64
Castleberry	4	59	.41	4	67	.56	17	261	.66	16	256	.67
Waco	2	27	.64	2	38	.40	10	119	.67	9	115	.71
Elementary Totals	9	133	.67	9	147	.66	51	761	.72	48	697	.74
					Junior High Grades (7 and 8)							
Everman	4	69	.61	4	56	.12	2	32	.72	2	24	.62
Bonham	4	48	.72	4	46	.77	6	79	.54	6	88	.64
McKinney	3	46	.55	2	18	.80	13	166	.73	14	193	.78
Castleberry	5	81	.86	5	85	.63	9	171	.73	8	112	.69
Junior High Totals	16	244	.74	15	205	.64	30	448	.72	30	417	.74
Combined Elementary and Jr.High	25	377	.72	24	352	.65	81	1209	.72	78	1114	.74

the pooling of like-sex teacher ratings within districts.

The group averages in Table 26 are the same as the totals in Table 27. These may be used to compare reliabilities by grade level, sex of teacher, and sex of pupils. The highest reliabilities were obtained by men teachers rating junior high boys and by women teachers rating elementary girls and junior high girls; these were all .74. Women teachers' ratings of elementary and junior high boys were next, with reliabilities of .72, while the reliabilities of men teachers' ratings of elementary boys and of both elementary and junior high girls were lowest, ranging from .64 for junior high girls to .67 for elementary boys. In general, the pooled ratings of boys and of girls by men and women teachers cancelled out differences. However, the results indicate that women teachers' ratings were significantly more reliable than those of men, with those for men rating girls lowest (.65) and those for women rating girls highest (.74). No discriminable differences were found attributable to pooled reliabilities of men and women teachers by grade level.

The teacher sample included nine Negro teachers in two school districts. These consisted of one male elementary teacher with two class-groups, one of 13 boys and another of 10 girls, six women elementary teachers with combined groups of 88 boys and 84 girls, and two women junior high teachers with 35 boys and 27 girls, jointly. The reliability coefficients for these small groups follow the general pattern described, and are as follows:

Elementary. 1 man teacher rating 13 boys: .58
rating 10 girls: .66

6 women teachers rating 88 boys: .83
rating 84 girls: .80

Junior High. 2 women teachers rating 35 boys: .60
rating 27 girls: .70.

The weighted mean reliability of the pooled ratings by the 108 teachers of 3052 children was .72. This is somewhat higher than the reliability reported earlier for LM and about equal to that for LL. Although this was a relatively small sample, compared to the numbers used in other parts of the overall study, the consistency of the correlations of Teacher Ratings, for the first year, four-point scale as well as for the ratings on the seven-point scale, with other variables throughout the study, supports the representativeness of these results.

TEACHER RATING CHARACTERISTICS

Many reports in the literature (Bonney, 1943; 1947; Gronlund, 1950a; 1950b; 1954; 1956; 1959; Myers, 1961; Ullman 1957; White and Harris, 1961) support the use of Teacher Ratings as useful measures of peer relations. Teachers are in many ways the best qualified adults to provide objective observational reports on the relative popularity, leadership, influence and skill in interpersonal relations with peers of the children in their classes. Yet objectivity itself is relative, and various writers have reported or speculated on the differential ability of men and women teachers to relate with and to evaluate boys and girls. In general, women teachers are believed to empathize with the problems of young children better than men teachers, although some believe that men relate better with boys and women with girls. It has generally been observed that both men and women evaluate girls more favorably than boys, but that men are "softer" on girls. This section presents some empirical data on these and related issues. In addition to examining the effects of sex of teacher and pupil on teacher ratings, data are presented relating a number of other teacher characteristics to the accuracy of ratings by teachers.

AGREEMENT OF TEACHER RATINGS WITH PEER RATINGS

Correlation

As shown in Tables 37 through 45, below, Teacher Ratings are indeed substantially correlated with the LM and LL scores. For LM the correlations with TR range from .51 to .54 for the Texas sample and from .54 to .59 for Minnesota, in the four successive years of data collection. For LL, they are lower; the Texas correlations vary from .34 to .44 and the comparable Minnesota correlations range from .41 to .46. The corresponding correlations for the more representative difference score, LD, range from .51 to .55 for Texas and from .55 to .60 for Minnesota. These correlations are about equal to those between the LM and LL scores and support the confidence in teachers' judgments and observations reflected by the inclusion of Teacher Ratings in the study. However, correlations reveal only the degree of rank order covariation, and there is also a question concerning agreement in terms of distance on a common scale. The next analysis was undertaken to measure such agreement.

Distance Measures

A sample of 540 Texas teachers, 48 men and 492 women, was selected individually from all districts participating in the study in 1961 on the basis of having completed questionnaires for a survey of teacher education conducted by the Texas State Board of Examiners for Teacher Education

(1962; LaGrone, 1962). That survey was carried out by colleagues of the writers, and the availability of extensive information on the personal characteristics and professional training of a large number of teachers in the present study was welcomed as an opportunity to investigate correlates of the accuracy of teacher ratings of peer relations, using peer choice scores as the standard.

In order to study correlates of accuracy of teacher ratings, a measure of accuracy was required. The measure adopted was the root mean square of the summed differences between the standard score of the Teacher Rating (zTR) and of each peer choice standard score (zPC) for the class groups rated by each teacher. This measure, referred to as D, was computed for LM, LL, and LD separately. For each teacher, nine D scores were computed, three each for boys, girls, and boys and girls combined; each teacher was identified as man or woman. The general formula to the D score was:

$$D = \sqrt{\frac{\Sigma(zTR - zPC)^2}{N}}$$

where zTR = the Teacher Rating z score,
zPC = the Peer Choice z score (LM, LL, or LD)
and N = the number of paired differences included.

Table 28 presents the means and standard deviations and t-tests of the respective differences between means for men and women teachers' D scores for LM, LL, and LD for boys, girls, and boys and girls combined. The D score is computed

Table 28. Comparison of Means and Standard Deviations of D Scores for men and women teachers rating Boys, Girls, and Boys and Girls Combined.

	Men (N=48)		Women (N=492)		Mean	
Variable	Mean	S.D.	Mean	S.D.	Difference	t
D LM boys	1.06	.39	1.04	.38	.02	.29
D LL boys	1.12	.46	1.15	.45	-.03	.35
D LD boys	1.02	.44	1.02	.42	0	0
D LM girls	1.27	.35	1.02	.38	.25	3.62**
D LL girls	1.33	.43	1.12	.46	.21	3.04**
D LD girls	1.24	.40	1.01	.42	.23	3.69**
D LM both	1.18	.28	1.05	.31	.13	2.67**
D LL both	1.28	.33	1.16	.37	.12	2.03*
D LD both	1.18	.30	1.04	.35	.14	2.68**

* p<.05
**p<.01

so that the smaller the D the greater the similarity (accuracy) and the less the distance between sets of measures compared. It is apparent that the differences between men and women teachers are negligible for ratings of boys, but that women are significantly more accurate than men in rating girls. The teacher sex differences in agreement on girls are so great that they account for the significant differences found for boys and girls combined, as well. Not only are women more accurate in general, but their mean D is lowest for girls. The order of these differences matches quite closely the pattern of reliability coefficients for Teacher Ratings, reported above.

Table 29 shows the intercorrelations of the nine D scores for the men and women teachers separately. This table reveals two interesting sets of relationships. First, it may be seen, both for men and women teachers, that the accuracy of rating in relation to LM and LL is highly consistent; the intercorrelations of LM, LL, and LD D scores, respectively, for men are .89, .86, and .86, and for women they are .86, .84, and .87. Second, the correlations between accuracy of rating of boys and girls on all measures are negative for men teachers and positive for women teachers. The latter result suggests that men who are accurate in rating boys tend to be inaccurate in rating girls, and vice versa, while women tend to be consistent with both. These

Table 29. Intercorrelation of nine D Scores, LM, LL, and LD, for Boys (B), Girls (G), and Boys and Girls Combined (C), for men and women teachers. Year I Texas sample.

Men Teachers (N=48)

Variables	1 LM-B	2 LL-B	3 LD-B	4 LM-G	5 LL-G	6 LD-G	7 LM-C	8 LL-C	9 LD-C
1 LM-B		.89	.96	-.11	-.14	-.14	.70	.61	.68
2 LL-B			.97	-.12	-.13	-.14	.63	.71	.70
3 LD-B				-.14	-.15	-.16	.67	.68	.71
4 LM-G					.86	.96	.60	.49	.54
5 LL-G						.97	.49	.59	.54
6 LD-G							.55	.55	.55
7 LM-C								.86	.96
8 LL-C									.97

(Women Teachers (N=492)

Variables	1 LM-B	2 LL-B	3 LD-B	4 LM-G	5 LL-G	6 LD-G	7 LM-C	8 LL-C	9 LD-C
1 LM-B		.86	.96	.25	.23	.25	.80	.71	.78
2 LL-B			.96	.21	.22	.22	.68	.78	.75
3 LD-B				.24	.23	.24	.76	.77	.79
4 LM-G					.84	.96	.76	.66	.74
5 LL-G						.95	.65	.75	.72
6 LD-G							.73	.73	.76
7 LM-C								.87	.97
8 LL-C									.96

results support the belief in the greater empathy of women teachers in their observation of children's peer relations.

INFLUENCE OF SOCIOECONOMIC STATUS (SES) OF PUPILS ON TEACHER RATINGS

In view of the widely mentioned opinion that teachers, as members of the middle class, tend to evaluate middle class pupils more favorably than those from lower classes, a preliminary analysis was made of the ratings by 20 men and 20 women teachers in Minneapolis of 645 boys and 634 girls, approximately evenly divided between the lowest and next to lowest of four socioeconomic divisions of the population of that city in 1963. Class III may be described as low-middle and Class IV as low in socioeconomic status. Ratings were reflected so that higher scores indicate positive peer relations.

Table 30 compares means of boys and girls in the two SES classes on the pooled ratings of men and women teachers, separately and combined. No discriminable differences appear, related to SES for boys, but the ratings of girls are higher for SES III when rated by men and by women. Further study of the relationships suggested by this analysis is indicated.

Table 30. Raw teacher rating mean scores for 20 men and 20 women elementary teachers in Minneapolis, 1963, by sex of pupil and SES.

SES Subsamples	Mean Teacher Ratings			
	Boys	(N)	Girls	(N)
SES III				
Men Teachers	3.09	(171)	3.25	(158)
Women Teachers	3.21	(168)	3.52	(162)
Combined	3.15	(339)	3.39	(320)
SES IV				
Men Teachers	3.12	(153)	3.15	(152)
Women Teachers	3.14	(153)	3.34	(162)
Combined	3.13	(306)	3.25	(314)

INFLUENCE OF TEACHER CHARACTERISTICS, TRAINING, AND BACKGROUND ON TEACHER RATINGS

Using the questionnaires completed by the 540 Texas teachers who participated in the 1961 state survey mentioned above, it was possible to examine a number of interesting items reflecting personal characteristics of teachers, professional training, and experience in relation to accuracy of peer relations ratings, by means of the accuracy (D) scores described above.

Thirty-eight items in the Teachers' Questionnaire, listed below, were examined in relation to accuracy of Teacher Ratings of peer acceptance-rejection by Chi-square analysis of contingency tables for each item. The tables were uniformly constructed to provide category distributions of response frequencies for the respective items, by sex of pupil, sex of teacher, and range of D score, classified as high, middle, or low by third, according to the following intervals:

	High Agreement (16 male, 164 female)	Middle Agreement (16 male, 164 female)	Low Agreement (16 male, 164 female)
Male Teachers Rating Boys	.56 to .77	.78 to 1.07	1.08 to 2.54
Male Teachers Rating Girls	.52 to .96	.97 to 1.44	1.45 to 2.23
Female Teachers Rating Boys	.37 to .77	.78 to 1.08	1.09 to 2.50
Female Teachers Rating Girls	.37 to .77	.78 to 1.01	1.02 to 2.63

The items included were as follows:

1. Age (of teacher)
2. Race (White or Negro)
3. Teaching under emergency permit
4. Teaching under one-year permit
5. Teaching under special assignment permit
6. Interruption of undergraduate work to teach
7. Completion of requirements for teacher's certificate at college graduation
8. If yes (on 7), was certificate permanent?
9. Attendance at junior college
10. Year of completion of most recent course for college credit
11. Was this course (10) in summer school?
12. Year awarded bachelors degree
13 Total undergraduate hours in student (practice) teaching
14. Number of school systems attended during elementary and junior high school
15. Number of undergraduate semester hours in professional education (excluding practice teaching)
16. Course taken in reading instruction
17. Course taken in arithmetic instruction
18. Was major part of teaching preparation in traditional subjects?
19. Distance of present teaching position from high school attended
20. Identification of first graduate major
21. Identification of first undergraduate major

22. Total semester hours completed above bachelors degree

23. Type of masters degree held

24. Identification of college from which bachelors degree was received

25. Type of undergraduate degree received

26. Year of beginning first full-time teaching position

27. Total years of full-time teaching experience

28. Years of full-time teaching experience in present school district

29. Number of different school systems in which you held full-time teaching positions

30. If more than one school district, was last move to smaller or larger school district?

31. Reason for most recent change (see 30)

32. If any change occurred in level of assignment, description of last change in terms of levels involved, from and to

33. Number of one-year or greater breaks in full-time teaching experience

34. Assignment for a semester or longer to teaching out of area of level of basic preparation

35. Primary reason for leaving teaching, in event of previous breaks in service

36. Reason for returning to teaching, following previous breaks in service, if any

37. Whether college granting bachelors degree was church or state supported

38. General field classification of first undergraduate major.

The complete tabulation of these data may be obtained upon request to the authors.[1] The net result of the analysis, for all but four items for which tables are included below, was random with respect to accuracy of Teacher Rating as reflected by the D scores. The remaining tables would be of interest only with respect to demographic and experience background of a sample of Texas teachers, and, for that information, the Survey report (LaGrone, 1962) would be more appropriate.

The Teacher Questionnaire items related significantly to D score distributions were 2 (Race), 6 (Interruption of undergraduate work to teach, 11 (Last college course for credit taken in summer school), and 25 (Type of undergraduate degree received).

Table 31 presents the data on Race (Item 2). There were no male Negro teachers in the sample; hence, the analysis applies only to female teachers. The results indicate significantly higher agreement with pupil ratings by Negro women teachers, as compared with White women teachers, for ratings of both boys and girls. Since these data were obtained at a time when Negro schools were segregated, it may be noted that the Negro teachers were most likely segregated in living as well as work conditions and were in a position to have closer

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Table 31. Relation of race of teacher to D Score measure of accuracy of TR. Entires represent numbers of teachers in each response category.

Sex of Pupil	Boys						Girls					
Sex of Teacher	Male			Female			Male			Female		
Race of Teacher	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.
White	16	16	16	151	156	161	16	16	16	149	157	162
Negro	0	0	0	12	6	3	0	0	0	13	6	2
No Reply	0	0	0	1	2	0	0	0	0	2	1	0

Chi-Square = 6.27
df = 2
$p < .05$

Chi-Square = 9.25
df = 2
$p < .01$

personal knowledge of the lives of their pupils, as neighbors in the minority settlement, than might be expected for White teachers in the same school districts.

Item 6 asked, "If your undergraduate work was not continuous, was it interrupted to teach?" As shown in Table 32, answers of No were received from 23 of the 48 men (48 per cent) and from 164 of the 492 women (33 per cent), indicating that 52 per cent of the men and 67 per cent of the women had interruptions. The higher per cent for women reflects the vulnerability of women to marriage, pregnancy, and other socially determined factors that interfere with education. No clear trend is observable for men teachers, but women teachers whose educations were interrupted to teach tend to be low in accuracy of ratings. This trend, which is significant at the .05 level for women teachers rating girls, most probably reflects the generally poorer training of older teachers who began teaching in past years before degrees were required. This analysis suggests further that the present item-by-item analysis of the Teacher Questionnaire data may be overlooking more significant relationships that might be extracted by a more sophisticated, multivariate approach. However, this analysis was tangential to the Peer Sutdy, and funds were not available within its framework to undertake a more extensive analysis.

Table 33 complements the foregoing analysis by demon-

Table 32. Relation of interruption of undergraduate work to teach with the accuracy of teacher ratings. Entries represent numbers of teachers in each response category.

Sex of pupil	Boys						Girls					
Sex of teacher	Male			Female			Male			Female*		
	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.
A. Interrupted to teach	1	3	3	74	65	78	2	3	2	60	72	85
B. Interrupted not to teach	5	7	6	40	39	32	7	6	5	42	39	30
C. Not interrupted	10	6	7	50	60	54	7	7	9	62	53	49

*Chi-Square test of A vs B + C = 7.73, df = 2, $p<.05$ for women teacher's accuracy in rating girls.

Table 33. The relation of responses to "Was the most recent course taken in summer school?" to the accuracy of teacher ratings. Entries represent numbers of teachers in each response category.

Sex of pupils	Boys						Girls					
Sex of teachers	Male			Female			Male			Female*		
Response	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.
A. Yes	8	10	10	105	90	101	8	10	10	115	90	91
B. No	8	4	6	55	70	60	6	6	6	47	71	67
C. None	0	2	0	4	4	3	2	0	0	2	3	6

*Chi-Square test of A vs B = 8.88, df = 2, p<.02 for women teachers' accuracy in rating girls.

strating that women teachers whose most recent college credit course was taken in summer school, and who to that extent may be considered motivated and professionally oriented beyond their own peers, tend to be significantly high in accuracy of rating. The trend is observable, but not significant in ratings of boys; it is significant at the .02 level in ratings of girls.

The fourth item that produced a positive relations was number 25, Type of undergraduate degree received. The three highest-frequency categories reported by men and women were BA, BS, and BS in Ed., summarized in Table 34. Here again, no trend was observable for men, but for women, the academic, BA degree is associated with high accuracy of rating, while the professional, BS and BS in Ed. degrees are associated with low accuracy. The results for women rating boys are not significant, but for women rating girls they are significant at the .05 level.

While the results for other items fail to reach significance, the positive relations reported for items 6, 11, and 25 suggest that further, more searching analysis of the teacher background data might be profitable. Many of the items, such as special permits (items 3, 4, 5) revealed extreme divisions between those identified as in the special category and the large majority of others. In most cases, the distributions showed no differentiation related to D

Table 34. The relation of type undergraduate degree received to accuracy of teacher rating. Entries represent numbers of teachers reporting each type of degree.

Sex of pupil	Boys						Girls					
Sex of teacher	Male			Female			Male			Female*		
Type of degree	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.	High Acc.	Mid Acc.	Low Acc.
A. BA	4	4	5	53	50	53	6	3	4	68	48	44
B. BS	8	8	7	46	54	43	7	10	6	44	47	52
C. BS El. Ed.	2	2	3	60	50	62	3	1	3	49	63	60

*Chi-Square test of A vs B + C = 6.44, df = 2, $p < .05$ for women teachers' accuracy in rating girls.

score when tabulated independently, but the possibility of joint effects with other items could not be explored in the present univariate analysis. On the basis of the marginal results obtained, these are indications that professional training and motivation of teachers, as well as propinquity, as in the case of the Negro women teachers, might be isolated as significant contributing factors to accuracy of Teacher Ratings.

STABILITY OF PEER AND TEACHER RATINGS OVER FOUR YEARS

The reliability estimates reported above for peer choice scores were based on within-year data, and those for teachers employed repeat ratings accomplished during the third year of the study. The result of each analysis was an estimate of the reproducibility of the ratings obtained within a particular year. The present analysis focuses on another facet related to the reliability of these measures, namely, the stability of such ratings over longer time intervals.

The index of stability, involving the correlations of identical measures on the same individuals from year to year, is a gross estimate of the consistency of ratings under conditions in which (a) the individuals rated advance in age from year to year and change in various ways, (b) the raters vary to some extent, for Peer Ratings, as class composition changes and change, in the case of Teacher Ratings, and (c) the school environment changes, most drastically in the transition from elementary to junior high school, but subtly in many respects from year to year.

No attempt has been made to allot responsibility to the various sources of variance that may account for the level of stability of the ratings, although this might be worthwhile. The principal emphasis in this analysis is on the comparison of the stability estimates over time with the reliability estimates for a single year.

Table 35 summarizes the stability correlations over all one-year intervals for the Texas and Minnesota total samples. This table presents comparable data for a two-year sample (Years I and II), which is the largest sample available, and for the three- and four-year samples, which are smaller, as explained earlier. The years compared are identified, and correlation coefficients are presented for LM, LL, and TR, the three independently defined variables, as well as for the derived variables, LD and DT.

With the exception of the Texas coefficients for Years I and II, which involve the largest sample and are highest of all for peer choice scores, the stability coefficients for one-year intervals are very homogeneous for all variables. Although the reliability of LL (.7) was higher than that for LM (.6), Table 35 shows that the LM scores are more stable

Table 35. Stability estimates of peer status scores for two, three, and four-year samples. Texas, Minnesota, and Total Samples.

					Variable		
Sample	Years	N	LM	LL	LD	TR	DT
			Two-Year Sample				
Texas	1 & 2	6518	.57	.47	.59	.43	.63
Minn.	1 & 2	2944	.50	.39	.53	.49	.59
Total	1 & 2	9462	.55	.45	.58	.45	.62
			Three-Year Sample				
Texas	1 & 2	2257	.52	.42	.54	.38	.57
Texas	2 & 3	2257	.47	.43	.52	.39	.56
Minn.	1 & 2	1620	.52	.35	.54	.50	.60
Minn.	2 & 3	1620	.54	.44	.56	.57	.64
Total	1 & 2	3877	.52	.39	.54	.43	.59
Total	2 & 3	3877	.50	.43	.54	.47	.59
			Four-Year Sample				
Texas	1 & 2	1307	.51	.45	.54	.36	.57
Texas	2 & 3	1307	.46	.46	.52	.36	.55
Texas	3 & 4	1307	.48	.48	.55	.45	.58
Minn.	1 & 2	670	.55	.36	.56	.49	.62
Minn.	2 & 3	670	.51	.37	.53	.60	.61
Minn.	3 & 4	670	.49	.42	.52	.58	.61
Total	1 & 2	1977	.53	.42	.55	.40	.59
Total	2 & 3	1977	.48	.43	.53	.44	.57
Total	3 & 4	1977	.48	.46	.54	.49	.59

than LL over time. However, the differences in both cases are moderate. The stability levels of these measures and of LD are lower than their reliabilities, but nevertheless encouragingly high.

In view of the fact that the TR for each child is completed by a different teacher each year, the stability of TR, with an average of .47, is remarkable and compares most favorably with that of LD, which averages .55. The average stability of the composite DT is .60 and is probably the most appropriate measure of peer acceptance-rejection to use in relation with other variables from the standpoint of reliability and stability.

Table 36 presents the stability results in more detail. This table identifies subsamples by year and school grades involved and shows stability coefficients for these longitudinally, for one, two, and three-year intervals, for both Texas and Minnesota samples. The data presented show a reduction in stability for the longer time intervals, but these are complicated by the transition from elementary (grades 3 to 6) to junior high school (grades 7, 8, 9) discussed previously. The lowest stability coefficients, for both peer scores and teacher ratings, are found in the junior high range. The comparison of reliability and stability coefficients at the junior high level suggests that the consistency of the individual from group to group, with

Table 36. Longitudinal comparisons of stability estimates for peer choice and teacher rating scores. Texas and Minnesota samples.

Sub-Sample		Rating Interval (years)	School Grades by Survey year				Texas					Minnesota				
			1	2	3	4	N	LM	LL	LD	TR	N	LM	LL	LD	TR
2 Year	A	1	3	4			1875	.57	.47	.60	.47	910	.54	.34	.54	.51
	B	1	4	5			1832	.61	.49	.62	.44	971	.51	.39	.55	.49
	C	1	5	6			1811	.57	.48	.59	.42	1063	.46	.43	.50	.48
	D	1	6	7			1000	.50	.43	.53	.33					
3 Year	A	1	3	4			670	.50	.40	.52	.39	746	.55	.34	.57	.50
	A	1		4	5		670	.49	.50	.58	.43	746	.54	.39	.56	.59
	A	2	3		5		670	.46	.34	.48	.39	746	.49	.37	.51	.48
	B	1	4	5			749	.58	.42	.59	.43	874	.49	.35	.51	.51
	B	1		5	6		749	.54	.42	.55	.43	874	.53	.37	.57	.55
	B	2	4		6		749	.52	.41	.54	.40	874	.38	.38	.45	.45
	C	1	5	6			548	.52	.48	.56	.35					
	C	1		6	7		548	.47	.40	.50	.29					
	C	2	5		7		548	.42	.41	.48	.35					
	D	1	6	7			290	.40	.35	.44	.24					
	D	1		7	8		290	.27	.37	.38	.37					
	D	2	6		8		290	.37	.37	.40	.27					
4 Year	A	1	3	4			486	.47	.39	.49	.42	670	.55	.36	.56	.49
	A	1		4	5		486	.49	.53	.58	.42	670	.51	.37	.53	.60
	A	1			5	6	486	.57	.56	.64	.52	670	.49	.42	.52	.58
	A	2	3		5		486	.44	.34	.46	.38	670	.48	.35	.49	.48
	A	2		4		6	486	.51	.49	.56	.48	670	.48	.38	.53	.58
	A	3	3			6	486	.43	.34	.46	.41	670	.42	.33	.44	.45
	B	1	4	5			370	.60	.47	.60	.34					
	B	1		5	6		370	.53	.44	.54	.39					
	B	1			6	7	370	.44	.45	.52	.47					
	B	2	4		6		370	.54	.41	.53	.35					
	B	2		5		7	370	.42	.40	.48	.28					
	B	3	4			7	370	.40	.41	.43	.30					
	C	1	5	6			356	.51	.51	.57	.29					
	C	1		6	7		356	.44	.36	.45	.27					
	C	1			7	8	356	.44	.44	.48	.43					
	C	2	5		7		356	.41	.40	.47	.35					
	C	2		6		8	356	.46	.40	.51	.35					
	C	3	5			8	356	.43	.35	.45	.26					
	D	1	6	7			95	.38	.48	.49	.32					
	D	1		7	8		95	.16	.48	.38	.18					
	D	1			8	9	95	.29	.36	.39	.23					
	D	2	6		8		95	.35	.34	.34	.23					
	D	2		7		9	95	.28	.31	.41	.35					
	D	3	6			9	95	.24	.39	.39	.35					

greater group turnover at this level, is a less important (though still significant) factor than the relation of the individual to the peer group rating him in any one year.

INTERCORRELATIONS OF PEER SCORES

Intercorrelations were computed among the three primary peer scores, LM, LL, and TR, and the two derived scores, LD and DT, in z-score form, both within and across years. Workers in sociometry have long known that negative nominations, ranks, and ratings are not the opposite of positive selections. This is not only a statistical fact, reflecting relatively large coefficients of alienation between positive and negative sociometric indices, but a rational interpretation of human relations in group and organizational situations. For example, a new child in a school may receive few LM nominations and, hence, a low LM z-score, but also few LL nominations and, hence, a relatively high LL z-score. Although the construction of the LD and DT composite scores implies a bipolar continuum, which describes the rank order of peer acceptance-rejection over the entire range, the dimensions of acceptance and rejection appear psychologically to reflect somewhat different and perhaps discrete factors. The analyses reported here give some support to the argument for discreteness and enable an accurate estimate of the variance common to the positive and negative components.

INTERCORRELATIONS WITHIN YEARS

Tables 37, 38, and 39 present the intercorrelations of the five measures of peer acceptance-rejection, by year, for the Texas and Minnesota samples, one for boys, girls, and boys and girls combined, respectively.

Overall, the correlation between LM AND LL is approximately .5, running very slightly higher for girls (.51) than for boys (.49) in both states. The correlations of LM with TR and LL with TR average .54 and .41, respectively, with no apparent sex differences but with somewhat higher coefficients for both sexes in the Minnesota than in the Texas samples. Reference to Tables 37 and 38 also discloses some small but consistent changes from Year I to Year IV in these data which bear comment. The LM with LL correlations for boys and girls decrease in the Texas data and increase slightly in the Minnesota data. At the same time, the LL with TR correlations decrease in both samples, while the LM with TR correlations show no consistent pattern.

The differences in direction of change in Texas and Minnesota on the LM with LL correlations are believed to be explained by differences in the composition of the two samples. The absence of junior high students in the later

Table 37. Summary of intercorrelations of boys' peer status scores, within years, in four annual surveys. Texas, Minnesota and Total Samples.

		Correlations between									
		LM	LM	LL	LM	LL	LD	LM	LL	TR	LD
Year	N	LL	TR	TR	LD	LD	TR	DT	DT	DT	DT
		Texas Sample									
I	8938	.50	.51	.44	.90	.82	.56	.87	.78	.76	.96
II	4312	.49	.53	.37	.89	.81	.54	.88	.76	.73	.96
III	1904	.46	.53	.36	.87	.82	.53	.86	.76	.73	.96
IV	1358	.48	.55	.32	.89	.82	.52	.88	.75	.73	.96
		Minnesota Sample									
I	8621	.46	.53	.46	.89	.81	.58	.86	.77	.77	.96
II	2363	.51	.59	.44	.89	.83	.61	.88	.78	.79	.96
III	1568	.50	.54	.43	.88	.84	.57	.86	.79	.76	.96
IV	1142	.51	.53	.41	.88	.85	.54	.86	.80	.75	.96
		Total Sample									
I	17559	.48	.52	.45	.89	.81	.57	.86	.77	.76	.96
II	6675	.50	.55	.40	.89	.82	.56	.88	.77	.75	.96
III	3472	.48	.53	.39	.88	.83	.54	.86	.78	.74	.96
IV	2500	.49	.54	.36	.88	.83	.53	.87	.77	.74	.96

Table 38. Summary of intercorrelations of girls' peer status scores, within years, in four annual surveys. Texas, Minnesota and Total Samples.

		Correlations between									
		LM	LM	LL	LM	LL	LD	LM	LL	TR	LD
Year	N	LL	TR	TR	LD	LD	TR	DT	DT	DT	DT
					Texas Sample						
I	8353	.54	.51	.43	.89	.84	.54	.87	.80	.74	.96
II	4170	.52	.55	.40	.89	.84	.55	.87	.78	.74	.95
III	1817	.50	.55	.36	.87	.85	.53	.86	.78	.74	.96
IV	1275	.49	.49	.36	.86	.85	.49	.85	.80	.71	.96
					Minnesota Sample						
I	8454	.48	.55	.46	.89	.82	.59	.86	.78	.77	.96
II	2352	.50	.58	.43	.89	.83	.59	.87	.78	.78	.96
III	1512	.52	.54	.43	.88	.85	.56	.86	.79	.77	.96
IV	1165	.53	.56	.41	.89	.84	.56	.88	.79	.76	.96
					Total Sample						
I	16807	.51	.53	.44	.89	.83	.57	.86	.79	.75	.96
II	6522	.51	.56	.41	.89	.84	.56	.87	.78	.75	.96
III	3329	.51	.54	.39	.87	.85	.55	.86	.79	.75	.96
IV	2440	.51	.53	.39	.88	.85	.53	.86	.79	.74	.96

Table 39. Summary of intercorrelations of combined boys' and girls' peer status scores, within years, in four annual surveys. Texas, Minnesota and Total Samples.

		Correlations between									
		LM	LM	LL	LM	LL	LD	LM	LL	TR	LD
Year	N	LL	TR	TR	LD	LD	TR	DT	DT	DT	DT
					Texas Sample						
I	17291	.52	.51	.44	.89	.83	.55	.87	.79	.75	.96
II	8482	.50	.54	.38	.89	.83	.54	.87	.77	.73	.95
III	3721	.48	.54	.36	.87	.83	.53	.86	.77	.73	.96
IV	2633	.49	.52	.34	.88	.83	.51	.87	.77	.72	.96
					Minnesota Sample						
I	17075	.47	.54	.46	.89	.81	.58	.86	.77	.77	.96
II	4715	.51	.59	.44	.89	.83	.60	.88	.78	.79	.96
III	3080	.51	.54	.43	.88	.85	.56	.86	.79	.76	.96
IV	2307	.52	.54	.41	.89	.85	.55	.87	.79	.76	.96
					Total Sample						
I	34366	.50	.53	.45	.89	.82	.57	.86	.78	.76	.96
II	13197	.50	.56	.40	.89	.83	.56	.87	.78	.75	.96
III	6801	.49	.54	.39	.88	.84	.54	.86	.78	.75	.96
IV	4940	.50	.53	.37	.88	.84	.53	.87	.78	.74	.96

years in the Minnesota data restricted the age range of the Minnesota group as compared with the Texas group. Since, as reported earlier in the analysis of split-half reliabilities, the reliability of LM decreases and of LL increases with age, the small differences found over the four years of the study may reflect these effects. The consistent decline of the LL with TR correlations over the four years, in both samples, was not evident when homogeneous samples of elementary school children were compared, as in Table 40. The sample differences, just noted, would be expected to produce a greater decline in the Texas than Minnesota data, but these differences appear to be offset by the generally higher correlations of teacher ratings with peer scores for the Minnesota teachers.

Table 40 presents the intercorrelations of the three basic measures of peer acceptance-rejection for four successive years on the same samples of boys and girls in elementary grades in the Texas and Minnesota samples. With the exception of 3rd grade girls in the first year, the LM with LL correlations are relatively stable across samples for each of the four years. The correlations of LM with TR tend to be higher in both samples than the correlations of LL with TR. The LM with TR and LL with TR correlations tend to be slightly lower in the Minnesota than the Texas sample; two of the comparable coefficients differed significantly;

Table 40. Summary of intercorrelations peer status scores in four successive years, for boys and girls separately. Texas and Minnesota Samples.

		LM with LL		LM with TR		LL with TR	
Year	Grade	Tex.	Minn.	Tex.	Minn.	Tex.	Minn.
				Boys			
I	3	.43	.44	.54	.48	.39	.35
II	4	.48	.45	.51	.55	.43	.34
III	5	.51	.51	.54	.56	.49	.41
IV	6	.50	.42	.66	.52*	.44	.32
	N	250	316	250	316	250	316
				Girls			
I	3	.61	.50	.64	.55	.53	.30*
II	4	.51	.47	.62	.61	.42	.38
III	5	.51	.49	.55	.54	.32	.34
IV	6	.47	.55	.61	.55	.50	.44
	N	236	354	236	354	236	354

*Indicates that the difference between r's for corresponding samples was significant at the .01 level on a two-tail test.

these were between LM and TR for 6th grade boys and between LL and TR for 3rd grade girls.

Nevertheless, the changes across years are, as noted, minor. The LM and LL measures, overall, have about 25 per cent of their variance in common, which suggests that although pupils can be arrayed on a continuum from high acceptance to high rejection, the scale is not truly bipolar and correlates of LM and LL may vary. The correlations of TR with LM and LL confirm this, indicating that teachers' ratings of peer acceptance-rejection covary more closely with LM than with LL. These correlations imply that the TR has 29 per cent of variance in common with LM, but only 17 per cent with LL, the latter decreasing from 21 per cent in Year I to 13 per cent (overall) in Year IV. With the combined, bipolar peer measure, LD, the correlations of TR in Table 39 are approximately the same for boys and for girls in the two states, .54 for Texas (29 per cent of common variance) which includes children at the elementary and junior high school levels and .58 for Minnesota (34 per cent) which includes only elementary school children.

The correlation of LM, LL, and TR with LD and DT and of LD with DT in these tables are inflated by the inclusion of one variable in the composite with which it is correlated; these are presented to afford further evaluation of the dependencies of these variables in terms of their relative contributions to the composites.

INTERCORRELATIONS ACROSS YEARS

Tables 41, 42, 43, 44 and 45 present the intercorrelation of four measures over four successive years for a sample of boys and girls in the two states. Again, the Texas sample includes elementary and junior high school pupils whereas the Minnesota sample includes elementary pupils only.

Several patterns which are consistent across samples are apparent. (1) Each of the four triangular sub-matrices adjoining the main diagonal, and each of the six off-diagonal square matrices shows the stepwise trend characteristic of learning data and longitudinal correlations. In each triangular sub-matrix , the diagonal represents intercorrelations of scores for adjacent years; the magnitudes of the correlations involving the same variables at different times tend to drop off rather gradually. (2) For the square matrices, the correlations in the diagonal involve different measures for the same years; the magnitudes of the off-diagonal coefficients decrease as the time interval between measurements increases.

Except for minor variations, the patterns of correlations presented in Table 45 for the four year Texas and Minnesota samples combined prevail for Texas Boys, Texas Girls, Minnesota Boys, and Minnesota Girls. The intercorrelations of LM in different years are about .50 for

Table 41. Intercorrelations of four peer status scores in four successive years. N = 661 Texas Boys.

	Variables														
	LM_2	LM_3	LM_4	LL_1	LL_2	LL_3	LL_4	TR_1	TR_2	TR_3	TR_4	LD_1	LD_2	LD_3	LD_4
LM_1	.51	.45	.43	.47	.29	.31	.29	.51	.39	.38	.36	.91	.49	.44	.41
LM_2		.50	.49	.32	.44	.30	.30	.36	.47	.42	.40	.50	.89	.47	.46
LM_3			.48	.30	.35	.48	.34	.36	.35	.51	.47	.45	.51	.90	.48
LM_4				.29	.33	.36	.52	.27	.34	.42	.58	.43	.49	.49	.90
LL_1					.40	.34	.33	.44	.30	.27	.28	.79	.40	.36	.35
LL_2						.47	.41	.31	.32	.28	.26	.39	.75	.46	.42
LL_3							.48	.29	.26	.37	.25	.37	.43	.81	.47
LL_4								.23	.19	.28	.35	.36	.41	.46	.83
TR_1									.34	.33	.32	.56	.39	.38	.29
TR_2										.37	.36	.41	.51	.36	.32
TR_3											.47	.39	.42	.52	.41
TR_4												.38	.40	.43	.55
LD_1													.52	.48	.45
LD_2														.55	.52
LD_3															.55
LD_4															

Table 42. Intercorrelations of four peer status scores in four successive years. N = 646 Texas Girls.

	Variables														
	LM_2	LM_3	LM_4	LL_1	LL_2	LL_3	LL_4	TR_1	TR_2	TR_3	TR_4	LD_1	LD_2	LD_3	LD_4
LM_1	.52	.47	.39	.54	.33	.31	.29	.54	.42	.42	.42	.87	.50	.44	.40
LM_2		.43	.41	.34	.49	.29	.29	.36	.50	.31	.37	.50	.89	.41	.41
LM_3			.48	.33	.34	.49	.32	.33	.34	.51	.40	.44	.45	.86	.48
LM_4				.28	.32	.37	.48	.27	.32	.36	.47	.37	.43	.48	.88
LL_1					.50	.41	.41	.43	.28	.32	.26	.82	.48	.42	.39
LL_2						.45	.45	.29	.30	.27	.25	.45	.83	.45	.44
LL_3							.49	.29	.26	.30	.29	.39	.42	.83	.49
LL_4								.25	.22	.26	.35	.38	.42	.45	.82
TR_1									.37	.37	.35	.53	.39	.36	.31
TR_2										.34	.41	.39	.48	.34	.32
TR_3											.42	.41	.34	.48	.37
TR_4												.38	.36	.39	.48
LD_1													.56	.47	.44
LD_2														.50	.49
LD_3															.55
LD_4															

Table 43. Intercorrelations of four peer status scores in four successive years. N = 316 Minnesota Boys.

	Variables														
	LM_2	LM_3	LM_4	LL_1	LL_2	LL_3	LL_4	TR_1	TR_2	TR_3	TR_4	LD_1	LD_2	LD_3	LD_4
LM_1	.56	.48	.37	.44	.29	.30	.21	.48	.49	.46	.45	.92	.54	.47	.35
LM_2		.52	.45	.33	.45	.40	.34	.34	.55	.41	.47	.55	.91	.54	.48
LM_3			.46	.27	.26	.51	.26	.31	.47	.56	.46	.47	.49	.91	.44
LM_4				.16	.32	.37	.42	.20	.38	.40	.52	.34	.46	.48	.89
LL_1					.29	.37	.37	.35	.30	.29	.23	.75	.35	.36	.29
LL_2						.38	.40	.22	.34	.25	.34	.34	.76	.34	.41
LL_3							.42	.27	.35	.41	.37	.38	.45	.82	.46
LL_4								.09	.30	.24	.32	.31	.41	.37	.77
TR_1									.42	.36	.36	.51	.33	.34	.17
TR_2										.57	.59	.48	.55	.48	.41
TR_3											.58	.46	.41	.57	.39
TR_4												.43	.49	.48	.52
LD_1													.55	.50	.38
LD_2														.54	.53
LD_3															.51
LD_4															

Table 44. Intercorrelations of four peer status scores in four successive years. N = 354 Minnesota Girls.

	Variables														
	LM_2	LM_3	LM_4	LL_1	LL_2	LL_3	LL_4	TR_1	TR_2	TR_3	TR_4	LD_1	LD_2	LD_3	LD_4
LM_1	.54	.49	.46	.50	.30	.30	.31	.55	.48	.50	.47	.93	.52	.47	.45
LM_2		.51	.51	.39	.47	.37	.36	.44	.61	.49	.49	.56	.91	.51	.51
LM_3			.51	.30	.27	.49	.33	.38	.46	.54	.48	.48	.49	.89	.49
LM_4				.32	.30	.32	.55	.40	.45	.42	.55	.48	.50	.50	.92
LL_1					.42	.33	.29	.30	.34	.32	.26	.77	.47	.36	.35
LL_2						.36	.36	.32	.38	.28	.28	.40	.78	.36	.36
LL_3							.42	.22	.29	.34	.34	.36	.43	.82	.41
LL_4								.33	.38	.33	.44	.35	.42	.43	.83
TR_1									.56	.57	.52	.53	.46	.36	.42
TR_2										.63	.58	.50	.60	.45	.48
TR_3											.58	.50	.47	.52	.43
TR_4												.46	.47	.49	.58
LD_1													.57	.49	.48
LD_2														.53	.52
LD_3															.52
LD_4															

Table 45. Intercorrelations of four peer status scores in four successive years. N = 1977 children in the Texas and Minnesota samples.

Variables

	LM_2	LM_3	LM_4	LL_1	LL_2	LL_3	LL_4	TR_1	TR_2	TR_3	TR_4	LD_1	LD_2	LD_3	LD_4
LM_1	.53	.47	.41	.49	.31	.31	.28	.52	.43	.43	.42	.79	.51	.45	.41
LM_2		.48	.46	.34	.46	.33	.31	.37	.52	.40	.42	.52	.89	.47	.46
LM_3			.48	.30	.32	.49	.32	.34	.38	.52	.44	.45	.48	.89	.47
LM_4				.27	.32	.35	.50	.29	.36	.40	.53	.40	.47	.49	.89
LL_1					.42	.37	.36	.40	.30	.30	.26	.79	.43	.38	.36
LL_2						.43	.41	.29	.33	.27	.27	.40	.79	.42	.41
LL_3							.46	.28	.28	.35	.30	.38	.43	.82	.46
LL_4								.24	.25	.28	.36	.36	.41	.44	.82
TR_1									.40	.39	.38	.53	.40	.36	.31
TR_2										.44	.46	.43	.52	.39	.36
TR_3											.49	.42	.40	.51	.40
TR_4												.40	.42	.43	.53
LD_1													.55	.48	.44
LD_2														.53	.51
LD_3															.54
LD_4															

adjacent years; they drop to about .46 for the two-year interval and then to .40 between Years I and IV. The year to year correlations for LL are smaller than those for LM; in the Texas sample the intercorrelations of LL are lower for boys (Table 41) than for girls (Table 42), while those for Minnesota boys (Table 43) and Minnesota girls (Table 44) do not differ markedly. The intercorrelations of LD are stable across samples of boys and girls in both states.

The remarkable consistency among the three measures based on peer ratings over three years in the two state sample and across boys and girls should be noted. The correlations of LM_1 and LL_4 (.28) are quite similar to LM_4 and LL_1 (.27). Similar relations may be noted for LD, LM and LL over the three year period.

The data suggest that teachers, rather than peers, are likely to change their ratings with the passage of time. In the total sample LM_1 with TR_1 are correlated .52; this drops to .43 for LM_1 with TR_2 and levels off to .42 for LM_1 with TR_4. On the other hand, reading down the column, TR_1, the drop is to .29 for TR_1 with LM_4. A similar pattern exists for LL and TR in the two states for boys but not for girls.

ANALYSIS OF MATRIX METHODS OF ANALYZING SOCIOMETRIC (PEER) RATING) SCORES: RELATIONS OF SOCIOMETRIC STATUS OF CHOOSER AND CHOSEN

One of the central methodological problems considered in this study concerned the relations between the status, on scales of peer acceptance-rejection, of the chooser and the individuals chosen by each pupil (chooser). The analysis reported here, which is adapted from a technical report by Roff and Sells (1967), presents an analysis of relations between the peer scores of chooser and chosen on the LM, LL, and LD scales.

In terms of the related literature, this analysis is relevant to approaches from two formally separated, but not unrelated areas. The first of these is the use of matrices in deriving basic sociometric scores. The second is that of the perception of others, a somewhat heterogeneous area. The relationships of the problem of the present analysis to these two areas are discussed separately.

THE USE OF MATRICES IN OBTAINING SOCIOMETRIC SCORES

The sociometric literature contains a number of theoretical articles recommending the use of matrices in obtaining the basic sociometric score for each individual involved. These recommendations have generally not been followed by persons making empirical studies.

Matrices have been very intensively used in multiple factor analysis for more than thirty years and they are familiar to behavioral scientists. The introduction of matrix methods in factor analysis had the effect of rendering obsolete the earlier approach based on tetrad differences, which were associated with the one general factor approach, and led to the general use of multiple factor methods within a period of five or six years after their introduction. This has not been the case with the use of matrices to obtain sociometric scores. On the contrary, it is very difficult to find any significant empirical applications of matrix methods to obtain sociometric scores in the literature, although a small number of papers have used data to illustrate the matrix procedures. In other words, matrices have had a long and fruitful history in multiple factor analysis but a shorter and relatively unproductive history in relation to sociometric scores. (The use of matrices to obtain indications of reciprocal choices, cliques, and so forth, is a somewhat different problem to which the preceding and following comments do not necessarily apply.)

A review of the main papers recommending the use of a matrix approach to sociometric scores will indicate that although this approach was first suggested modestly and tentatively, it later was said to have displaced earlier procedures, without any solid empirical data to support this assertion. It is interesting to follow this development along.

One of the advantages claimed for the matrix approach is that it retained an indication of the level of chooser in evaluating the choices given to an individual. The present report is concerned with a fairly large-scale illustration of the relations which prevail between choosers and chosen in two large samples of grade school children. The results presented here may not generalize to all other ages; on the other hand, in the absence of any other information about other ages, they may provide a more accurate guide than speculations based on no data at all.

The earliest of this series of studies appears to be the paper by Forsyth and Katz (1946) pointing out that sociograms have certain difficulties, particularly if the the number of persons involved is large. They made "an attempt to preserve all the data and present it in an orderly, meaningful manner" (p. 340). Instead of a sociogram, they present a tabular approach in which the matrix manipulation is limited to an interchange of rows and columns without any further matrix operations. The purpose of this is "to produce a new matrix which exhibits the group structure graphically in a standard form" (p. 341). The method was described as "somewhat cumbersome" and the hopes were expressed that further work would lead to a more workable procedure. Subsequently, Katz (1947) carried the development somewhat further and pointed out that the matrix approach still indicates, as does the sociogram, who chooses whom so that this information is not lost. Matrix equations appear for the first time. In conclusion, it was hopefully stated "that further algebraic processes can be identified with social processes or the results with social phenomena" (p. 240). Festinger (1949), after pointing out that Forsyth and Katz had initiated the use of a matrix for sociometric analysis, pointed out that information about 2-step and 3-step connections can be obtained by squaring or cubing a matrix, and that matrices can be used in the determination of cliques. Luce and Perry (1949) suggested that it is possible to give a matrix expression to the choices given by members of a group. Their paper is concerned primarily with formal mathematical possibilities. Proctor and Loomis (1951) gave a conservative description of matrix analysis as of that time, as they pointed out, "perhaps a more important justification is the fact that matrix theory has been widely used in other fields and presents operations which may have (and some have actually been found to have) a meaning for sociometry" (p. 582). They also recognize the similarity of the simplest matrix approach to the sociogram.

Katz (1953) presented some additional theoretical discussion and a very much stronger claim for the superiority of matrix methods over scoring systems which involve some variation of a sum of choices received, without regard to their source. "For a considerable time, most serious investigators of interpersonal and inter-group relations have been dissatisfied with the ordinary indices of 'status' of the popularity contest type" (p. 39) (that is, the status index which treats one choice as equivalent to another). "The purpose of this paper is to suggest a new method of computing status, taking into account not only the number of direct 'votes' received by each individual but, also, the status of each individual who chooses the first, the status of each who chooses these in turn, etc. Thus, the proposed new index allows for who chooses as well as how many choose" (P. 39). Using an artificially constructed six person group, he argues that his new procedure was better than status determined in the "popularity contest" way. We have been unable to find an empirical comparison of Katz's procedure with the "popularity contest" method in his paper or elsewhere. In the ten years since this has appeared, we have been unable to find any applications of this procedure to substantive data.

Katz's discussion, however, clearly raised the question of the ordinary size of the correlation between choosers and chosen in the sociometric situation. Glanzer and Glaser

(1959), in a review of techniques, pointed out concerning individual indices that "there may be an important difference between the individual who is chosen by three group members who are themselves chosen by many others and the individual who is chosen by three 'isolates'" (p. 320). It is very possible that this is so, but it seems to us that there would be a certain saving of time if the consideration of theoretical possibilities were influenced by some actual statistical frequencies.

We may next jump to the paper by Jamrich (1960). He asserted that "a number of research workers in the field of sociometry have clearly identified the inadequacy of the ordinary methods used in the analysis of sociometric data" (p. 249). Following a mention of Katz, Jamrich stated that "it is the purpose of this paper to present the development of a relatively simple numerical characteristic for sociometric data which will permit: 1. determination of the status of an individual within the group, taking into account his choices and the kinds of choices by others in which he is involved" (p. 249). Again, we find the unproved assumption that any procedure which disregards the actual persons choosing and concentrates solely on the number of choices is inadequate.

The purpose of the present analysis is to give firm, empirical information concerning the correlations between chooser and chosen, not only for positive choices but also for negative choices and for a combination of the two for a very large sample of school children. It is hoped that the results will provide a factual foundation for theoretical discussions of methods of scoring choice data which have not been available to the various proponents of matrix scoring. It is possible that the present results may indicate why there has been such complete disregard of the matrix scoring approach by empirical workers in this area.

Social Perception Studies

A second line of work to which the present analysis bears some relationship is the work on "social perception" of one kind or another. This area includes studies of "sociometric perception," "accuracy of social perception," "the understanding of others," the ability to forecast *others'* sociometric status, "group relevant social perception," and the relationship of any of these or related concepts to "effectiveness in interpersonal relationships" in so far as this is indicated by choice status. One "finding" that is sometimes reported in work of this kind is that in a sociometric or quasi-sociometric situation, people tend to choose "upward." This would seem to be only another way of saying that some persons receive more choices than others.

This area is sufficiently heterogeneous as to both procedure and kind of sample studied that it is not certain that it is fruitful to discuss it as a unit. The social perception studies can be divided for convenience into three types. Type 1 investigates the relationship between the chooser's own choice status and his predictions for others and includes studies of the relationship between sociometric status and accuracy of prediction of the responses of peers to a standard psychological inventory or questionnaire, or sociometric status and ability to predict the sociometric status of others in the group. With a wide variety of samples and considerable variations in procedures, the following studies found a positive correlation between perceiving or judging others' status or responses and own actual status (Gage, 1952; Goslin, 1962; Green, 1948; Gronlund, 1955b; Lewis and Spilka, 1960; O'Connor, 1960). On the other hand, some other studies, particularly some in which Ausubel (1953, 1955; Ausubel and Schiff, 1955) was involved, found no relationship here. A third possibility is that of a qualified relationship, in which the correlation between chooser's own status and his predictions for others depends on circumstances (Exline, 1960).

Tyep 2 studies relate the individual's choice status to his estimate either that certain other individuals would choose him or that a certain number of other individuals would choose him. Again under varied conditions, a positive relationship between perceiving or judging _own_ status and _own_ actual status was reported by Ausubel (1955), Ausubel and Schiff (1955), Gallagher (1958), Goslin (1962), Gronlund (1955b), O'Connor (1960), and Trent (1959).

Type 3 studies may be defined as including those comparing leaders with non-leaders in accuracy of appraisal of group opinion on some topic or topics. Leaders were found to be superior in appraising group opinions by Bell and Hall (1954), Chowdhry and Newcomb (1952), and Greer, Galanter and Nordlie (1954). On the other hand, little or no relationship was reported by Cohn, Fisher, and Brown (1961), and Hites and Campbell (1950).

Information bearing directly on the chooser-chosen relationship is contained in a study by Tagiuri, Kogan, and Long (1958), which was primarily directed toward the identification of choosers, as in the studies classed above as Type 2. Using 106 subjects from a college preparatory boarding school and asking for designations of students with whom they would prefer to room the following year, they found that there was a positive relationship between the status of the chooser and that of the person chosen, significantly different from zero (.05 level).

These social perception studies, except for that by Tagiuri, Kogan and Long (1958), differ from the present study in that we did not ask for judgments of what other people would do. We have concerned ourselves primarily with determining relationships between choice status of choosers and chosen, for positive, negative, and a combination of positive and negative choices.

PROCEDURE

Scores were included for all classes of the third through sixth grades in the participating school systems for Year I. Computer programs were prepared to obtain correlations between scores representing the status of chooser and chosen. This programming was done before the appearance of a note on such programs by Ames and Higgins (1963). Contact with them was established and information exchanged. They have available a series of programs written for the UNIVAC 1105 to handle this special task.

These chooser-chosen correlations relate the scores of children choosing others as LM or LL to the scores of the children they chose. Each child made two types of choices: four other children were chosen as LM and two other children were chosen as LL. The LD score is based on the difference between LM and LL for each individual.

Among the possible combinations of scores of choosers and chosen for LM choices alone, there are nine combinations. These are referred to here and subsequently as "criteria" and may be listed as follows:

Like-Most Choices

Criterion		
1.	LM vs LM	Correlation between LM scores of choosers and LM scores of those they chose as LM.
2.	LM vs LL	Correlation between LM scores of choosers and LL scores of those they chose as LM.
3.	LM vs LD	Correlation between LM scores of choosers and LD scores of those they chose as LM.
4.	LL vs LM	Correlation between LL scores of choosers and LM scores of those they chose as LM.
5.	LL vs LL	Correlation between LL scores of choosers and LL scores of those they chose as LM.
6.	LL vs LD	Correlation between LL scores of choosers and LD scores of those they chose as LM.
7.	LD vs LM	Correlation between LD scores of choosers and LM scores of those they chose as LM.
8.	LD vs LL	Correlation between LD scores of choosers and LL scores of those they chose as LM.
9.	LD vs LD	Correlation between LD scores of choosers and LD scores of those they chose as LM.

There would be an exactly corresponding set of pairs of scores of the LL choices, so that there were nine pairs for positive choices and nine pairs for negative choices. The total sample was also broken down by school grade (3, 4, 5, 6) and by socioeconomic status (1, 2, 3, 4) and by sex (boys, girls and combined).

The number of separate correlations for the main city can be presented as follows:

There were 9 LM and 9 LL pairs:	18
Each of these was computed for boys, for girls, and for boys and girls combined	x3
	54
There were 4 school grades, computed separately:	x4
	216
There were 4 SES levels, computed separately:	x4
Total set of correlations:	864

These could be combined by grades for sex and SES comparisons, and by SES levels for grade comparisons.

Subjects

The sample originally employed was from one large Minnesota city for which all public schools had been included. This contained approximately 11,000 pupils. At the same time data were available for approximately 19,000 pupils from the Texas sample. Since it seemed unnecessary to use this entire sample for replication, only 7,312 Texas pupils, representing several complete school districts for which data were recorded on two tapes, were included in these correlations.

Results

The total overall picture for the entire sample of pupils from the Minnesota city is shown in Table 46. If we consider the correlation based on the LM choices for the entire group, it can be seen that these nine correlations between scores of choosers and those whom they chose as LM are all positive and range between .01 and .04. They are barely above zero, but they are all positive. The nine categories listed are not uncorrelated, but with a small number of cases these correlations might still be expected to jump around more. The LL correlations for the entire group are consistently negative and range from -.11 to -.18. In terms of accuracy of perception, this means that the LL

Table 46. St. Paul: Chooser-Chosen Correlations. All grades, all SES levels.

Like Most Choices			Boys	Girls	Total
1. LM - Choosers	vs	LM - Chosen	+.02	+.02	+.02
2. LM	vs	LL	+.02	+.03	+.03
3. LM	vs	LD	+.02	+.03	+.02
4. LL	vs	LM	+.04	+.04	+.04
5. LL	vs	LL	+.00	+.02	+.01
6. LL	vs	LD	+.03	+.03	+.03
7. LD	vs	LM	+.03	+.03	+.03
8. LD	vs	LL	+.00	+.02	+.01
9. LD	vs	LD	+.02	+.03	+.03

Like Least Choices			Boys	Girls	Total
1. LM - Choosers	vs	LM - Chosen	-.15	-.12	-.14
2. LM	vs	LL	-.10	-.11	-.11
3. LM	vs	LD	-.15	-.13	-.14
4. LL	vs	LM	-.14	-.14	-.14
5. LL	vs	LL	-.16	-.17	-.16
6. LL	vs	LD	-.18	-.18	-.18
7. LD	vs	LM	-.18	-.15	-.16
8. LD	vs	LL	-.15	-.15	-.16
9. LD	vs	LD	-.19	-.18	-.18

Number of:	Boys	Girls	Total
Pupils	5471	5271	10742
Positive Choices	21833	20953	42786
Negative Choices	10941	10540	21480

choices of those who scored higher on LM, LL or LD were very slightly more in agreement with the group consensus than were the choices of those with lower scores on these three measures.

When these results are compared with those obtained with the sample of 7,312 Texas pupils, the cross-validation yields strikingly similar results. These are shown in Table 46a. For the LM choices for the total group, the 9 correlations are again all positive, this time ranging between .01 and .03. Again they are barely above zero, and again they are all positive. The LL correlations for the 9 categories of the total sample range from -.12 to -.19 instead of from -.11 to -.18. For the procedures and the age range employed in this study, the results are extraordinarily stable.

Accustomed as we are to working with smaller samples than these, we would not ordinarily pay any attention to the differences between these very small positive correlations of the Like-Most choices. However, for both the LM choices and LL choices, it appeared to visual inspection that some of the same correlations were relatively higher in both samples, and some were relatively lower. Consequently, rank difference correlations were calculated separately for the nine categories of LM choices and for the nine categories of LL choices. The rank difference correlation between the

Table 46a. Texas: Chooser-Chosen Correlations. All grades, all SES levels.

Like Most Choices	Boys	Girls	Total
1. LM - Choosers vs LM - Chosen	+.01	+.01	+.01
2. LM vs LL	+.02	+.02	+.02
3. LM vs LD	+.01	+.02	+.02
4. LL vs LM	+.02	+.03	+.03
5. LL vs LL	+.01	+.01	+.01
6. LL vs LD	+.02	+.02	+.02
7. LD vs LM	+.02	+.02	+.02
8. LD vs LL	+.01	+.01	+.01
9. LD vs LD	+.02	+.02	+.02

Like Least Choices	Boys	Girls	Total
1. LM - Choosers vs LM - Chosen	-.14	-.15	-.15
2. LM vs LL	-.10	-.13	-.12
3. LM vs LD	-.14	-.16	-.15
4. LL vs LM	-.13	-.16	-.15
5. LL vs LL	-.15	-.19	-.17
6. LL vs LD	-.16	-.20	-.18
7. LD vs LM	-.16	-.18	-.17
8. LD vs LL	-.14	-.18	-.16
9. LD vs LD	-.17	-.20	-.19

Number of:	Boys	Girls	Total
Pupils	3816	3496	7312
Positive Choices	15264	13984	29248
Negative Choices	7632	6992	14624

sets of positive correlations for the LM choices was .92. The rank difference correlation between the 9 pairs of negative correlations from the 2 samples for the LL choices was .96. With very large samples of this kind, it is possible to get a stability of values in different samples which is much greater than that ordinarily obtained. This illustrates very sharply the difference between statistical significance and the practical importance. The correlations for the 9 categories of the LM choices are all positive in 2 totally different samples. This gives a count of 18 to zero in favor of a positive relationship. On the other hand, the highest correlation in the whole set, from either sample, is .04. The practical limitations of a correlation of .04 are well known.

Comparison of Results for Girls and for Boys

When the correlational values are combined on the basis of sex, no consistent differences appear in the two samples. This is illustrated in the following tabulation. No difference is consistently in the same direction between the samples from the two states.

	Boys	Girls
Minnesota Sample		
LM choices	+.02	+.03
LL choices	-.16	-.15

Texas Sample		
LM choices	+.02	+.02
LL choices	-.14	-.17

Comparison of Results by Grades

The combined correlational values for the four grades for positive choices range from +.00 to +.04 in the Minnesota sample and from +.01 to +.03 in the Texas sample. For negative choices the combined correlational values for the four grades for Minnesota children are either -.15 or -.16 and the same is true for the Texas children. Replication in the two different areas gives very similar results and indicates no appreciable shift of values from the third through the sixth grade.

Comparison of Results for Different SES Levels

Division into SES levels was made only in the Minnesota sample, as the necessary data for Texas schools had not been compiled at the time this analysis was made. The combined correlational values for the positive choices were +.00, +.02, and +.04, going up the SES scale. While it is not impossible that this trend might cross-validate, it is too small to be emphasized. For negative choices the values for the four SES levels, from low to high, were -.16, -.16, -.16, and -.15. Here there is obviously no difference at all.

Discussion

These results throw some light on the two sets of problems discussed earlier, concerning (1) the use of matrices in obtaining sociometric scores, and (2) social perception, insofar as the present study relates to that somewhat heterogeneous field.

The extent that the use of matrices for obtaining sociometric scores is based on the supposed need for retaining information concerning who chooses as well as how many choose, the lack of relationship between chooser and chosen on positive choices makes the use of matrices in this connection clearly unnecessary. It is for all practical purposes also unnecessary for negative choices.

For the Minnesota sample of 10,742, the total overall correlation between the positive choice scores of the chooser and chosen was .024. With a sample this size this is not necessarily a zero correlation. If we had been addicted to elaborate hypothesis formation and to the associated formal hypothesis testing procedures, and if we had hypothesized ahead of time that there would be a positive correlation here, we could assert that the hypothesis was not contradicted by the results. When we used the same procedure on a new sample in a second state, we got a similar overall correlation of .017, using 7,312 children from Texas. We thus have a neatly cross-validated positive relationship, and if we were to follow a practice which is not uncommon in the behavioral sciences, we would say with considerable fanfare that the number of choices a child receives is a function of the choice status of those who vote for him.

Actually, of course, these correlations are, from any practical point of view, zeros. Thus, the concern of the matrix advocates who assert that it is necessary to retain information concerning the status of choosers is soon to be unfounded, and workers who are primarily concerned with actual data can continue to go happily along as they have been going.

This last statement will hold for anyone working with samples which are sufficiently similar to the present ones for the present results to be applicable. It is quite conceivable that there may exist samples which differ enough from these that the present results will not apply. However, rational consideration indicates that the present results may be generalizable to many markedly different samples. In the case of those receiving many Positive votes (the so-called "stars"), it would obviously be necessary for them to draw votes from individuals at all score levels. Similarly, in the case of those receiving no positive choices, the choice status of the non-choosers would obviously not matter. Due to practical difficulties associated with negative nominations, the large majority of studies deal only with positive choices.

The situation with respect to LL choices is slightly different. For the Minnesota sample of 10,742, the overall correlation between chooser and chosen was -.152. On cross-validation in Texas, the overall correlation on a sample of 7,312 was -.160. The interpretation of this is that youngsters of higher choice status were very slightly more accurate with their LL votes (in terms of group consensus) than low status children. Although these correlations are very firm and differ very little, they are still not large enough to make much practical difference. It would be definitely misleading with correlations of this size to make an unqualified statement that "LL votes of children of higher sociometric status are more similar to group consensus than those of low status children." It is possible to find statements of this type which are based on relations no higher than this one and on much smaller samples, being detached from their contexts and pursuing independent existences of their own in many behavioral science areas.

The present study differs from many of the "social perception" studies discussed in the early part of this section in that no questions were asked as to what a child thought other children would judge him to be like. The present results simply indicate no relation between the status of choosing children and of all the children chosen by them. Although this differs from studies which found a positive correlation between perceiving others' responses and own actual status, it is perhaps sufficiently different from them in procedure not to be considered as disagreeing.

The relationship between choosers and chosen on positive choices alone is apparently lower here than in the study of a college preparatory boarding school by Tagiuri, Kogan, and Long (1958). Insofar as our results are concerned, the positive relationship is so small for positive choices as to have neither practical nor theoretical significance.

Within the total samples, separate breakdowns were made for sex, school grade, and socioeconomic status. None of these variables made enough difference to have any practical significance.

CHAPTER IV.

ANTECEDENT CORRELATES OF PEER ACCEPTANCE-REJECTION

IV. ANTECEDENT CORRELATES OF PEER ACCEPTANCE-REJECTION

INTRODUCTION

The research reported in this Chapter is responsive to the question concerning factors in the backgrounds and life situations of individual children that are associated with peer acceptance and rejection and that account for significant variance in peer status measures. The studies included focus on demographic, structural, and behavioral aspects of families of the children in the two states. Inheritance and early environmental experience have long been viewed as critical determining factors in child development, and the present program illuminates significant aspects of these factors. In some respects the data presented are unprecedented in comprehensiveness; at the same time, the writers are aware of the limitations of the approach, which are inherent in the normative survey method employed. Case histories, in depth, of individual lives are not available, although some case material was collected and is cited.

Family Factors Identified Through Sibling and Twin Resemblance in Peer Status Scores. The first series of investigations identifies family background unequivocally as a major determiner of peer acceptance-rejection. These involve comparison of resemblance on peer scores of siblings, fraternal twins, and identical twins with control samples of unrelated children. The significant association of sibling scores, in contrast to the lack of association among controls, in comparable data from both states, was followed by the twin studies which produced a continuum of association of major importance. This research confirmed the significance of family background, with respect to both hereditary and environmental factors, but was only a first step in the examination of the nature of such influence.

Demographic and Structural Characteristics of Families in Relation to Peer Status Scores. These studies are followed by a series identifying demographic and structural characteristics of families that account for peer score variance. Factors investigated include intelligence, socio-economic status (SES), ethnic origin, race, and birth order. School achievement measures are included in this section, as the most appropriate place in the report, although their causality is recognized as considerably more complex. The results of these studies indicate positive associations between intelligence and SES with the peer acceptance-rejection continuum. Minority ethnic and racial status reflects rejection, although there are interesting and understandable sex differences. Within a racial minority, intelligence (and SES) operate in the same manner as in the

White majority of the school population. Birth order factors, favoring the youngest and only-child positions, are also significant, but at a lower level of relationship.

Family Background Studies. Finally, this Chapter includes two studies of behavioral aspects of families in relation to peer scores. The Minnesota study is based on tape recorded interviews with classroom teachers, by visiting teachers employed for the purpose, on a sample of children systematically selected from the high, middle, and low ranges of LD peer scores. The Texas studies, which produced highly similar results, were based on questionnaires sent to school coordinators for samples of children similarly selected. Although exploratory in character, both studies agree in demonstrating significant and substantial associations between peer scores and a wide range of indices of family social adjustment.

SIBLING AND TWIN RESEMBLANCE ON PEER SCORES

FAMILY INFLUENCE AS REFLECTED IN PEER ACCEPTANCE-REJECTION RESEMBLANCE OF SIBLINGS AS COMPARED WITH RANDOMLY ASSEMBLED SETS OF SCHOOL CHILDREN

A report of this study has been published (Sells and Roff, 1965) and a summary is included here. It involves the comparison of peer status resemblance among sets of siblings with that of randomly assembled control sets of the same school, grade, and sex composition.

Subjects

The present report is based on the total first-year sample. With the aid of school administrators and professional personnel assigned as Local Coordinators for the cooperating school districts, all sets of siblings included in the study were identified. There were 4,273 sets of two and 650 sets of three siblings in the total sample of 37,103 children in the four-grade range covered. For comparison with unrelated controls, comparable numbers of two- and three-sets were selected by random procedures from the remaining cases in each school district, after removing the siblings.

Procedure

To investigate the hypothesis that peer relations status, as represented by the sociometric and teacher rating variables, is a function of family influence, both the sibling and control samples were analyzed by intraclass correlation. The intraclass correlations were computed separately for the two-sets and three-sets. If significant correlation exists among siblings, but not among controls, it may be inferred that family background and social factors affect children's interpersonal relations in a predictable way.

Results

The gross results are summarized in Table 47. The intraclass correlations for all sibling two-sets and three-

Table 47. Intraclass correlations* for two-sets and three-sets of siblings and random controls, on five measures of peer acceptance-rejection, for 19-city Texas sample, Minneapolis, St. Paul, and Total sample.

		Texas		Minneapolis		St. Paul		Total	
		Sibs	Controls	Sibs	Controls	Sibs	Controls	Sibs	Controls
2-sets	N	1422	1390	1033	1033	1818	1818	4273	4241
	LM	.31	-.05	.25	-.11	.20	0	.25	-.04
	LL	.24	.01	.18	-.04	.18	.01	.20	0
	LD	.34	-.03	.26	-.07	.25	-.01	.27	-.03
	TR	.36	-.02	.29	-.02	.21	0	.27	-.01
	DT	.38	-.04	.33	-.07	.29	-.01	.32	-.03
3-sets	N	173	172	178	178	299	299	650	649
	LM	.30	-.05	.25	.02	.31	0	.28	0
	LL	.26	-.09	.21	-.03	.15	.03	.19	-.02
	LD	.33	-.06	.29	-.02	.29	.01	.29	-.02
	TR	.19	.15*	.19	-.02	.27	-.01	.22	.03
	DT	.35	-.02	.32	-.02	.33	0	.32	-.01

*All sibling correlations are significant at $p<.01$; all control correlations are non-significant except Texas TR, for which $p<.05$.

sets are positive and significant beyond the .01 level, while those for corresponding control samples are not significantly greater than zero. About one-third of the control correlations are positive, as compared with one hundred per cent for the siblings.

In both the two-sets and the three-sets, for siblings, the highest correlations were obtained for the composite variable, DT. This is consistent with other results in the general study and reflects principally the higher reliability of this variable and the greater amount of information concerning peer status represented by it. The results for LD are second in magnitude and can be explained in much the same way. The TR correlations are higher in the two-sets than the three-sets. Although teachers' ratings do account for significant variance in the estimation of peer status, they are more variable than sociometric ratings from sample to sample. In the present study the TR correlations compare favorably with DT and with LD for the two-sets, but are lower for the three-sets. In every case, the correlations for positive choice scores (LM) are higher than those for negative choice scores (LL), indicating greater sibling resemblance in positive, as compared with negative peer relations.

Table 48 presents further data on the intraclass correlations of siblings and controls, broken down by sex

Table 48. Intraclass correlations* for two-sets and three-sets of siblings and random controls, grouped by sex composition of sets, on five measures of peer acceptance-rejection, for combined Texas and Minnesota (Total) sample.

			Intraclass Correlations									
	No. of Sets		LM		LL		LD		TR		DT	
Groups	Sibs	Controls	Sibs	Controls	Sibs	Controls	Sibs	Controls	Sibs	Controls	Sibs	Controls
2-sets												
BB	1114	1244	.29	0	.18	-.01	.32	0	.26	-.05	.37	-.02
GG	1026	1849	.29	-.05	.21	.02	.30	-.03	.22	-.01	.35	-.03
BG	2133	1148	.19	-.05	.20	-.03	.24	-.06	.22	.01	.29	-.03
3-sets												
BBB	89	173	.30	-.02	.14	-.04	.24	-.04	.22	.01	.28	-.02
GGG	97	160	.33	.03	.13	.11*	.31	.06	.30	.12*	.38	.07
BBG	233	158	.27	.03	.24	-.08	.32	-.01	.21	-.05	.34	-.03
GGB	231	158	.30	-.04	.16	-.08	.31	-.06	.22	-.05	.34	-.07

*All sibling correlations are significant at $p<.01$; all control correlations are non-significant except GGG, LL, and TR, which are significant at $p<.05$.

composition of the sets, for the combined total sample. All of the sibling correlations are positive and significant beyond the .01 level. Again the control correlations are divided one-third to two-thirds between positive and negative signs and all but two are non-significant and close to zero.

Among the sibling two-sets, like-sex pairs show generally higher resemblance than unlike-sex pairs, but there are no discernible differences between boy-pairs and girl-pairs. Among the three-sets, however, resemblance among all-girl sets is higher than among all-boy sets, except on LL, but the correlations for mixed-sex sets are not lower than those for like-sex sets. The number of cases is smaller here than in the other groupings. Again, the correlations for LM are higher than for LL; the DT correlations are highest, with LD next. The TR correlations fall between LM and LL in magnitude.

Discussion

The data presented in Tables 47 and 48 support the hypothesis that peer acceptance-rejection is a function of family influence. Using DT as the most comprehensive measure of peer status, the fraction of variance in peer acceptance-rejection accounted for by the overall intraclass correlation of .32, which is the same for sibling two-sets and three-sets (Table 47), is ten per cent. This fraction approaches 15 per cent for like-sex sets and, as reported above, is higher for positive choice scores than for negative. It is higher in the Texas sample, drawn from small cities and communities in North Texas, than for the two metropolitan cities in Minnesota.

Replication. Since one of the design strategies of this study involves simultaneous replication of the research in the Texas and Minnesota samples, it is noteworthy that the results shown in Table 47 are consistent across samples. Arigorous test of the ordering of results for the Texas, Minneapolis, and St. Paul samples was applied by computing rho between the rank orders of the respective correlation coefficients for pairs of samples reported in Table 47. The rank-difference correlations are as follows: Texas and Minneapolis, .95; Texas and St. Paul, .40; Minneapolis and St. Paul, .61; and Texas and average of Minneapolis and St. Paul, .72. These results, based on considerably larger samples than are customary in this field, lend much weight to the generality of the conclusions concerning the relation of family influence to peer acceptance-rejection.

It appears that family influence on peer acceptance-rejection is mediated by conditions in the family which contribute to the child's getting along with his peers. The simultaneous study of roughly comparable samples in two quite different states gives additional firmness to the results reported above.

PEER ACCEPTANCE-REJECTION RESEMBLANCE OF TWINS

Resemblance of siblings on any behavioral measure must be expected to reflect the joint influence of hereditary and environmental factors. Although the methodology of human genetics is available to evaluate the relative weight of these sources in determination of the peer scores, we have been examining the appropriateness of the method in the present study, and these computations have not yet been made. They are, however, readily accessible from the analyses reported above.

In extending this study to fraternal and identical twins, it may be expected that resemblance on peer scores would increase progressively, inasmuch as similarity of environmental experience would be greater in fraternal twins than siblings (being greater for like-sex than unlike-sex fraternal twins as well as siblings) and similarity of both heredity and environment would be greatest for identical twins, living together, as in the case of all identical twins included in the sample.

Subjects

A subsample of 257 pairs of twins was tentatively identified by comparing surnames, birthdates and schools attended for all children in the total roster. With the aid of school administrators and professional personnel assigned as local coordinators for the cooperating school districts, 237 pairs of twins were classified as either Identical or Fraternal. The criterion for classification was based on teachers' judgments[1] as to whether the children looked enough alike to be identical twins. All unlike-sex twins were, of course, classified as fraternal. Twenty pairs of twins could not be classified for a variety of reasons, but primarily because the children or knowledgeable teachers had moved; these were excluded from the study. Table 49 describes the sample by classification and sex, for the Texas, Minnesota and Total samples. In this table twin pairs are also identified as being in the same or different classes.

Three measures of peer acceptance-rejection, LM, LL, and LD, were available on all 237 sets of twins. TR scores were not available for 8 children; accordingly, computations involving TR and the composite measure, DT, are based on a sample of 229 sets of twins.

Procedure

Intraclass correlation were computed for each of the five variables, LM, LL, LD, TR, and DT, for each of the sub-

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[1] Because of distance, the questionnaires for twin identification in the Texas sample were mailed to the School Coordinators, while closer surveillance was maintained in Minneapolis and St. Paul, where at least two or three teachers were consulted on each twin pair. It is believed that identification of identical and fraternal twin pairs was therefore more accurate in the Minnesota data.

Table 49. Description of sample of 237 pairs of twins drawn from the Texas and Minnesota samples.

	Texas			Minnesota			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Identical Twins									
Same Classroom	9	12	21	4	10	14	13	22	35
Different Classroom	13	7	20	7	12	19	20	19	39
Total	22	19	41	11	22	33	33	41	74
Fraternal Twins									
Same-Sex									
Same Classroom	6	4	10	6	2	8	12	6	18
Different Classroom	19	11	30	16	14	30	35	25	60
Total	25	15	40	22	16	38	47	31	78
Opposite-Sex									
Same Classroom	-	-	22	-	-	10	-	-	32
Different Classroom	-	-	22	-	-	31	-	-	53
Total	-	-	44	-	-	41	-	-	85

samples by twin category, using the maximum number of subjects for whom ratings were available. The classification of twins as being in the same or a different classroom was taken into account in an analysis using the 229 pairs for whom complete data were available.

The significance level of each intraclass correlation was determined by the functionally related F ratio which was routinely calculated and available as part of the computer output.

Results

In order to facilitate comparisons with results for twins, a summary of the intraclass correlations for siblings and controls, as well as twins, for the Texas, Minnesota, and Total samples is presented in Table 50. As this table clearly indicates, the expected progression of magnitude of correlation from controls to unlike-sex siblings to like-sex siblings to fraternal and identical twins was found. However, there are many sources of variation among subgroups, which require detailed examination.

Even though subgroup samples are in many cases quite small, all of the intraclass coefficients in Table 50 except those for control groups are positive as expected and most are significantly greater than zero.

Agreement Between Texas and Minnesota Results. Considering the small numbers of twin pairs in the several sub-

Table 50. Summary of intraclass correlations for pairs of twins, siblings and controls for Texas, Minnesota, and Total samples.

Groups	No. of Pairs(a)	LM	LL	LD	TR	DT
		TEXAS				
Identical-Boys	22	.64**	.34	.55**	.76**	.71**
Identical-Girls	19	.41	.57**	.56**	.59**	.57**
Identical-Combined	41	.51**	.49**	.55**	.66**	.62**
Fraternal-Boys	25 (24)	.27	.26	.40*	.58**	.56**
Fraternal-Girls	15	.81**	.26	.69**	.28	.66**
Fraternal-Like-Sex	40 (39)	.47**	.26	.49**	.45**	.56**
Fraternal-Unlike-Sex	44	.20	.03	.15	.13	.17
Siblings-Boys	387	.31**	.23**	.37**	.32**	.41**
Siblings-Girls	321	.37**	.25**	.35**	.20**	.38**
Siblings-Like-Sex	708	.34**	.24**	.36**	.26**	.40**
Siblings-Unlike-Sex	714	.28**	.24**	.33**	.28**	.37**
Siblings-Combined	1422	.31**	.24**	.34**	.27**	.38**
Controls-Boys	364	.05	.01	.04	-.05	.03
Controls-Girls	317	-.07	.03	-.04	.03	.00
Controls-Like-Sex	681	-.01	.02	0	-.01	.02
Controls-Unlike-Sex	709	-.10	.01	-.06	-.02	-.07
Controls-Combined	1390	-.05	.01	-.03	-.02	-.04
		MINNESOTA				
Identical-Boys	11 (10)	.87**	.59**	.78**	.84**	.93**
Identical-Girls	22 (20)	.71**	.80**	.86**	.81**	.90**
Identical-Combined	33 (30)	.76**	.75**	.84**	.77**	.87**
Fraternal-Boys	22 (20)	.45*	.62**	.63**	.33	.58**
Fraternal-Girls	16	.19	.67**	.43*	.42*	.41*
Fraternal-Like-Sex	38 (36)	.35*	.63**	.55**	.34*	.47**
Fraternal-Unlike-Sex	41 (39)	.25	.43**	.35*	.11	.28*
Siblings-Boys	727	.29**	.16**	.30**	.24**	.36**
Siblings-Girls	705	.26**	.18**	.28**	.23**	.35**
Siblings-Like-Sex	1432	.28**	.17**	.29**	.24**	.36**
Siblings-Unlike-Sex	1419	.14**	.17**	.20**	.18**	.25**
Siblings-Combined	2851	.22**	.18**	.26**	.21**	.31**
Controls-Boys	880	-.02	-.02	-.02	-.05	-.04
Controls-Girls	831	-.04	-.06	-.06	.01	-.05
Controls-Like-Sex	1711	-.03	-.04	-.04	-.02	-.05
Controls-Unlike-Sex	1140	-.02	.03	-.06	-.02	-.02
Controls - Combined	2851	-.04	-.01	-.03	-.01	-.03

Table 50 (Continued)

Groups	No. of Pairs(a)	IM	LL	LD	TR	DT
		TOTAL SAMPLE				
Identical-Boys	33 (32)	.72**	.54**	.68**	.78**	.80**
Identical-Girls	41 (39)	.55**	.71**	.72**	.68**	.74**
Identical-Combined	74 (71)	.62**	.65**	.70**	.72**	.77**
Fraternal-Boys	47 (44)	.34*	.44**	.50**	.44**	.56**
Fraternal-Girls	31	.52**	.54**	.56**	.36*	.53**
Fraternal-Like-Sex	78 (75)	.41**	.47**	.52**	.41**	.53**
Fraternal-Unlike-Sex	85 (83)	.24*	.26*	.27*	.11	.24*
Siblings-Boys	1114	.29**	.18**	.32**	.26**	.37**
Siblings-Girls	1026	.29**	.21**	.30**	.22**	.35**
Siblings-Like-Sex	2140	.29**	.20**	.31**	.24**	.36**
Siblings-Unlike-Sex	2133	.19**	.20**	.24**	.22**	.29**
Siblings-Combined	4273	.25**	.20**	.27**	.24**	.32**
Controls-Boys	1244	0	-.01	0	-.05	-.02
Controls-Girls	1148	-.05	-.03	-.06	.01	-.03
Controls-Like-Sex	2392	-.03	-.02	-.03	-.02	-.03
Controls-Unlike-Sex	1849	-.05	.02	-.03	-.01	-.03
Controls-Combined	4241	-.04	0	-.03	-.01	-.03

(a) Teacher Ratings were not available on 8 children; numbers in parentheses pertain to TR and DT variables.

* $p < .05$
**$p < .01$

groups, the level of statistical significance of the twin coefficients is high. Agreement between the two state samples, with respect to ordering of results by subgroup categories, was evaluated by computing Kendall's Coefficient of Concordance for the three basic measures, LM, LL, and TR, between corresponding results for the two samples. Five categories of relationship were used in selection of paired coefficients: identical twins, like-sex fraternal twins, unlike-sex fraternal twins, total siblings, and total controls. A concordance coefficient, W, of .96 ($p < .01$) was obtained, showing a highly significant degree of association across measures and replication samples.

Differences between the magnitudes of comparable coefficients obtained in the Texas and Minnesota samples for identical, like-sex fraternal, and unlike-sex fraternal twins were also compared. The coefficients for Minnesota identical twins, which, as noted earlier, were believed to be more accurately identified than identical twins in the Texas sample, were higher on all five measures than those for the Texas identical twins, but the differences were significant only for the two composite measures, LD and DT. The difference on LL for like-sex fraternal twins was significantly higher in the Minnesota sample; none of the other measures for like-sex fraternal twins differed significantly between the two states. No significant differences between states were found for unlike-sex fraternal twins.

Comparison of Resemblance within Sibling and Twin Categories. The rank order of degree of within-category resemblance, as shown in Table 50 and summarized below, conforms well with expectation based on hypothesized similarities of heredity and environment for the several categories. The rank order is as follows:

1. Identical twins
2. Like-sex fraternal twins
3. Like-sex siblings
4. Unlike-sex fraternal twins
5. Unlike-sex siblings
6. Control (unrelated individuals)

In order to test the significance of intercategory differences in resemblance, the intraclass coefficients for the combined state samples in Table 50 were transformed to Fisher's z and critical ratios between transformed category coefficients were computed. These are summarized in Table 51. Although like-sex pairs were generally expected to demonstrate greater similarity than unlike-sex pairs, within each category of related children, no systematic differences were expected or found between sexes. This is shown in the Between Sexes section at the top of Table 51.

Comparisons between categories, for boys and girls separately, appear next in this table. These comparisons involve only like-sex pairs. Identical twin resemblance is

Table 51. Tests of significance of differences for intraclass correlation coefficients between sets of twins and siblings in the total sample by sex and category.

Comparison Groups*	Critical Ratios between r's Transformed to z's				
	LM	LL	LD	TR	DT
Between Sexes, Same Categories					
IB vs IG	1.19	1.16	.32	.89	.61
FB vs FG	.92	.55	.35	.35	.14
SB vs SG	.00	.78	.54	.99	.54
Between Categories, Boys					
IB vs FB	2.40**	.57	1.17	2.42**	1.86*
IB vs SB	3.41**	2.40**	2.79**	4.26**	3.74**
FB vs SB	.40	1.99*	1.53	1.32	1.57
Between Categories, Girls					
IG vs FG	.17	1.12	1.15	1.72*	1.26
IG vs SG	2.06**	4.21**	3.79**	3.54**	3.29**
FG vs SG	1.54	2.19**	1.79*	.88	1.27
Between Categories Combined Sex Groups					
IT vs FL	1.77*	1.71*	1.85*	2.83*	2.57**
IT vs FU	2.95**	3.24**	3.71**	4.90**	4.82**
IT vs SL	3.62**	4.86**	4.64**	5.62**	5.46**
IT vs SU	4.50**	4.84**	5.26**	5.78**	6.10**
IT vs CT	6.53**	6.62**	7.66**	7.84**	8.97**
FL vs FU	1.21	1.55	1.89*	2.03**	2.15**
FL vs SL	1.19	2.67**	2.32**	1.66*	1.88*
FL vs SU	2.11**	2.67**	2.88**	1.84*	2.53**
FL vs CT	4.69**	5.03**	5.98**	4.39**	6.12**

Table 51 (Continued)

Comparison Groups*	Critical Ratios between r's Transformed to z's				
	LM	LL	LD	TR	DT
Between Categories, Combined Sex Groups					
FU vs SL	-.50	.58	-.39	-1.22	-.79
FU vs SU	.48	.57	.29	1.03	.49
FU vs CT	2.60**	2.43**	2.80**	1.10	2.58**
SL vs SU	3.56**	0	2.48**	1.38	2.57**
SL vs CT	12.78**	7.56**	13.23**	9.66**	15.35**
SU vs CT	8.77**	7.65**	10.37**	8.82**	12.40**

* $p<.05$
**$p<.01$

*Legend.		
	IB	Identical Boys
	IG	Identical Girls
	IT	Identical Twins, Combined
	FB	Fraternal Boys
	FG	Fraternal Girls
	FL	Fraternal Twins, Like-Sex
	FU	Fraternal Twins, Unlike-Sex
	SB	Sibling Boys
	SG	Sibling Girls
	SL	Siblings, Like-Sex
	SU	Siblings, Unlike-Sex
	CT	Controls, Total

fraternals on LM and LL, and like-sex siblings on LM. The unlike-sex fraternal twin correlations do not differ significantly from those of like- or unlike-sex siblings, but, except for TR, are significantly higher than comparable control correlations. The correlations for like-sex siblings were higher than the unlike-sex sibling correlations for LM, LD, and DT but not for LL and TR. The like- and unlike-sex sibling correlations were significantly larger than the control correlations on each of the five measures.

Effect of Common Classroom on Twin RAting Similarity. In order to determine the extent to which an artifact may have been introduced in the analysis of twin similarity as a result of attendance in common classroom, the intraclass correlations of pairs of twins in same classrooms were compared with those for pairs who attended school in different classrooms. The resulting correlations are shown in the left-hand part of Table 52, which is based on the 229 pairs of twins for whom complete ratings were available.

Critical ratios were computed to test the significance of the differences between coefficients for each of the 15 pairs of comparable same-class vs different-class correlation coefficients for the three categories of twins over the five variables. Only one of the critical ratios was significant. This was the ratio for TR for like-sex fraternal twins. The coefficients for identical twins in same significantly greater than sibling resemblance on all measures for both sexes. For boys, identical twins are significantly more similar than fraternal twins on LM, TR, and DT, and fraternals are marginally significantly more similar than siblings only on LL. The identical-sibling differences are the same for girls as for boys and girls also show a significant difference between fraternal twins and siblings on LL, as well as a marginally significant difference on LD. However, for the differences between identical and fraternal girl twins, only one difference is marginally significant; this is on TR.

Table 51 also compares the magnitudes of intraclass correlation coefficients for identical twins combined, boys and girls (IT) with like-sex (FL) and unlike-sex (FU) fraternal twins and like- (SL) and unlike- (SU) sex siblings and for both categories of fraternal twins with both categories of siblings. The distance between identical twins and like-sex fraternal twins is smaller than that between like- and unlike-sex fraternal twins. The identical twin correlations are significantly higher than those of both types of fraternal twins, while the differences between these reach significance on LD, TR, and DT, but not on LM or LL. The like-sex fraternal twin correlations are significantly higher than those for unlike-sex fraternals, like- and unlike-sex siblings, and controls, except for unlike-sex

Table 52. Comparison of intraclass correlations between twins rated by the same peers and teachers and twins rated by different peers and teachers (in different classes).

		Intraclass Correlations			Critical Ratios		
			Fraternal		Iden. vs	Iden. vs	L- vs
Rater Groups	Variable	Iden.	L-Sex	Unl-Sex	L-Sex Frat.	Unl-Sex Frat.	Unl-Sex
Same	LM	.70	.44	.13	1.31	2.95**	1.12
Different	LM	.59	.36	.29	1.77*	1.71*	.40
Same	LL	.76	.31	.11	2.25**	3.54**	.69
Different	LL	.57	.36	.26	1.59	1.72*	.57
Same	LD	.81	.46	.14	2.09**	3.94**	1.17
Different	LD	.66	.45	.28	1.81*	2.28**	1.01
Same	TR	.79	.85	.00	.61	4.29**	4.11**
Different	TR	.62	.24	.20	2.73**	2.28**	.22
Number of Pairs:							
Same Raters		35	18	32			
Different Raters		36	57	51			

* $p < .05$
**$p < .01$

classrooms were all higher than the paired coefficients for different classrooms, but the differences were not significant. For some reason not clearly understood the coefficients for unlike-sex fraternal twins were uniformly higher in the different-classroom groups, but these, too, were nonsignificant. In the like-sex fraternal twin group, the only substantial difference, noted above, was on TR. In that instance it appears as though the teachers expected any twins of the same sex to be highly similar, whether identical or not. The correlation of .85 for like-sex fraternal twins in same classrooms is comparable with that of .79 for identical twins in same classrooms, while the coefficient of .24 for like-sex fraternal twins in different classrooms is more like the .20 for unlike-sex fraternal twins in different classrooms. The general relationships among categories observed earlier prevailed within each rating group across the five peer score variables except in the case of TR for the unlike-sex fraternal twin group, as just noted. The trend observed in Table 52 is for the correlations of identical twins based on different raters to be somewhat lower than those based on the same raters. However, this did not occur in the other categories, except for the TR ratings of unlike-sex fraternal twins, as discussed above.

Summary. The most significant implication of the sibling and twin resemblance studies is that peer choices and rejections and teacher ratings of peer acceptance-rejection are influenced substantially by factors related to family membership and similarity of familial hereditary and environmental background. The additional similarity of identical twins and of like-sex fraternal twins reflected by increments in correlations for twins in same classes over those in different classes is believed to be partly an artifact of the attitudes of raters based on their beliefs concerning twin similarity. Although these increments appear to be substantial when comparing estimates of common variance (for example, on LD for identical twins the proportion of common variance between twins in same classes is one third higher than that for twins in different classes, or 65 per cent as compared with 44 per cent), the differences between intraclass correlation coefficients of twins in same and different classes were not significant in the samples tested.

Table 53 presents a summary of the average intraclass correlation coefficients for the various categories of relationship examined, showing each coefficient and the corresponding per cent of common variance (r^2) for the relationship involved for each of the five peer rating variables. The data in this table serve as a reminder of variations which reflect interactions of sex, measure, and factors associated with rating conditions which have

Table 53. Summary of intraclass correlation coefficients by category of relationship for five measures of peer acceptance-rejection. For each variable r and r^2 are shown.

Category	No. of Pairs	LM		LL		LD		TR		DT	
		r	r^2	r	r^2	r	r^2	r	r^2	r	r^2
Identical Twins											
Boys	33	.72	.52	.54	.28	.68	.46	.78	.61	.80	.64
Girls	41	.55	.30	.71	.50	.72	.52	.68	.46	.74	.55
Combined	74	.62	.38	.65	.42	.70	.49	.72	.52	.77	.56
Fraternal Twins											
Boys	47	.34	.12	.44	.19	.50	.25	.44	.19	.56	.31
Girls	31	.52	.27	.54	.29	.56	.31	.36	.13	.53	.28
Like-Sex	78	.41	.17	.47	.22	.52	.27	.41	.17	.53	.28
Unlike-Sex	85	.24	.06	.26	.07	.27	.07	.11	.01	.24	.06
Siblings											
Boys	1114	.29	.08	.18	.03	.30	.10	.26	.07	.37	.14
Girls	1026	.29	.08	.21	.04	.32	.09	.22	.05	.35	.12
Like-Sex	2140	.29	.08	.20	.04	.31	.10	.24	.06	.36	.13
Unlike-Sex	2133	.19	.04	.20	.04	.24	.06	.22	.05	.29	.08

received considerable attention above. For reasons already discussed, but particularly the effects on teachers of having like-sex twins in the same classes, it appears that the most unbiased estimate of resemblance can be made using the LD scores.

Table 54, based on LD data in Table 53, is a schematic summary of the overall resemblance relations for the five family categories carried through the foregoing analyses. The comparative data for the sixth, control category, of unrelated, randomly paired children were taken from Table 50. The estimates of resemblance in this table are lower than those given in the sibling study, above, which are based on the higher DT correlations. The LD data are more conservative. Table 54 compares a Resemblance Index, based on the squared average intraclass correlation of each relationship category on LD, with a scale of expected resemblance based on four resemblance factors that are scored 1, if present, or 0, if absent, for each category. All five family categories are scored 1 for same family, while the controls are scored 0. The identical twins receive a score of 4 (highest similarity), while the controls receive a score of 0 (no similarity). Like-sex fraternal twins rank second, with a score of 3. Although like-sex siblings and unlike-sex fraternal twins are tied with scores of 2, same sex is apparently a greater contributor to peer acceptance-

Table 54. Comparison of family resemblance among five categories of intrafamily relationship and unrelated control children with intraclass correlations on LD measures.

Relationship Categories	Resemblance Factors Same Family	 Same Sex	 Same Age	 Same Zygote	Resemblance Index (Per cent of common variance in correlation, r^2)
Identical Twins	1	1	1	1	49
Like-Sex Fraternal Twins	1	1	1	0	27
Like-Sex Siblings	1	1	0	0	10
Unlike-Sex Fraternal Twins	1	0	1	0	07
Unlike-Sex Siblings	1	0	0	0	06
Controls	0	0	0	0	00

rejection resemblance than same age, according to the resemblance results.

If the resemblance index per cents in Table 54 could be viewed additively, it would be interesting to use the resemblance of identical twins as the maximum and to evaluate the weights contributed by the four factors. However, this assumption does not appear justified. Rather, the jumps from categories with two factors of resemblance, to three, to four, suggest complex interactions as factors multiply rather than summate.

The difference between controls and unlike-sex siblings shows that family membership alone contributes a meaningful and significant portion of variance to sibling resemblance. Although resemblance increases when children are further related by sex, age, and genetic ties, the identification of family as a significant source of peer acceptance-rejection is perhaps the most important result leading to further investigation and explication of peer acceptance-rejection.

RELATION OF DEMOGRAPHIC AND FAMILY STRUCTURE VARIABLES TO PEER ACCEPTANCE-REJECTION

PEER ACCEPTANCE-REJECTION IN RELATION TO INTELLIGENCE AND SOCIOECONOMIC STATUS

Significant relations of sociometric choice status to intelligence and SES measures have long been known. The multivariate analyses reported here provide quantitative assessment of these relations on large samples of children and further take sex into account by socioeconomic background. The Texas and Minnesota samples were analyzed separately because comparable data for the two state samples were not available. Intelligence measures used were those available in the schools studied and varied widely, particularly among the Texas school districts. SES measures, based on published Census Tract data, were available for each school in the Minnesota sample, but for the Texas districts, many estimates had to be made on a Census County Division basis from unpublished United States Census Bureau sources. The first report, for a Minnesota sample, is a summary of a published paper by Roff and Sells (1965).

The earliest study combining intelligence and sociometric status that we have found is that of Almack (1922). His aim was somewhat different from that of the present investigation, but his procedure at this early date was sufficiently similar to later procedures to make it worth describing.

> To get at some evaluation of the influence of intelligence in determining the choice of associates among children, the following study was made. The subjects were 387 children in grades 4 to 7 inclusive, of the public schools of San Jose, California. The National Intelligence Test was first given, and mental ages and I.Q.'s computed. The pupils were next directed (1) to write the name of the boy or girl in his school whom he would select to help him if he were given some work to do, for which the person selected was well fitted;

> and (2) to write the name of the boy and the name of the girl in their school whom they would first invite to a party, assuming they were each given one (1922, p. 529).

He reported positive correlations between the IQs of the choosing children and of the children they chose.

The earliest study comparing IQ and choice status directly for a grade school sample is that of Hardy (1937). A sample was obtained from schools in Joliet, Illinois. Choices of desired associates were obtained during an interview. Intelligence was appraised by the Stanford-Binet. A correlation of .37 was reported between number of choices received and IQ. Later studies essentially similar to this one commonly obtained correlational values of this general magnitude (Bonney, 1942, 1943b, 1944, 1946; Davis, 1957; Gallagher and Crowder, 1956; Johnson, 1950; McGahan, 1940). On the other hand, Jennings (1943), in a study of adolescent girls in a training school, found a correlation of only .04 between IQ and choices received. This result is not typical of those obtained with unselected public school samples.

Two studies have gone beyond this gross correlational approach. One of these, by Grossmann and Wrighter (1948), employing a sample of four 6th grade classes in a university community, compared the relationships between intelligence and sociometric status using a three-interval breakdown of intelligence levels. They concluded that "intelligence did make a difference up to a certain point - normal intelligence -

but beyond that it did not materially affect the selection-rejection score" (1948, p. 354). This study is somewhat unsatisfactory since the middle intelligence group was defined so broadly as to leave few cases for the upper and lower groups. It is of interest since an hypothesis of a differential relation between intelligence level and sociometric status is stated.

The second of these studies, by Porterfield and Schlichting (1961), compared reading achievement scores obtained, using Test I, Paragraph Meaning, of the Stanford Achievement Test with various pupil characteristics, including sociometric scores. Their sample was drawn from 6th grade pupils in the Tulsa Public Schools; they had a total of 981 pupils drawn about equally from schools of high, middle, and low SES. As would be expected from the studies of intelligence, they found a firm relationship between this achievement test and sociometric status. When results by socioeconomic levels were examined, they found a relationship between achievement scores and social acceptability status in the high and middle group, but the relation between test scores and social acceptability was not significant in the low SES schools, although it was in the expected direction. This is similar to the Grossmann and Wrighter study in suggesting that the relationship between an intellectual variable and sociometric status is different at various levels, but data are opposing in the reported level at which the difference occurred. It is possible to hypothesize in either of these directions or in still other ways. In the absence of clearer support from the literature than is afforded by the studies reviewed here, an openly empirical approach was taken. There was no compelling reason to hypothesize that a difference would occur at any point in the scale, or that no difference would appear at any level.

Minnesota Study

Sample. The sample was based on first year data and included 4th grade children of both sexes from all schools in one Minnesota city (2,800 cases). The 4th grade in this city was employed because these children had been given the Lorge-Thorndike Intelligence Test during the school year, and because this city was the largest one in the study for which results were available for the entire city.

Socioeconomic level was determined on a census tract basis, making use of a combination of adult income and education from the 1960 census values. Separate classifications of census tracts on these two criteria gave highly similar results. The entire set of schools in the city was then divided into quartiles on the pasis of area in which each was located. Other information indicates that this classification of schools would correspond very closely to that made with the use of any other relevant indices of socioeconomic status, of which there are many. The difference between the upper and lower socioeconomic levels on the Large-Thorndike Intelligence Test was approximately the same in IQ points as the difference between highest and lowest socioeconomic levels of the Stanford-Binet when these were classified according to occupational level of father (McNemar, 1942). The differences found here are greater than those reported by Anderson (1962) for the Lorge-Thorndike Test for a partial sample from Syracuse, New York; there SES was estimated on the basis of the Sims Social Class Identification Scale.

Procedure. At each of our four SES levels, the group of "high" girls and "high" boys was defined as consisting of all those with standard scores 1 SD or more above the mean on LD. A corresponding group of "low" girls and "low" boys was defined as consisting of those with an LD standard score 1 SD below the mean.

Results. When the mean IQ for each of these groups was computed, the values shown in Table 55 and Fig. 1 were obtained (mean IQ values for all 4th grade girls and all 4th grade boys by socioeconomic status are also presented in Table 55).

There was a consistent sex difference of about 5 IQ points in favor of the girls at all four socioeconomic levels and for the total groups. This did not affect the

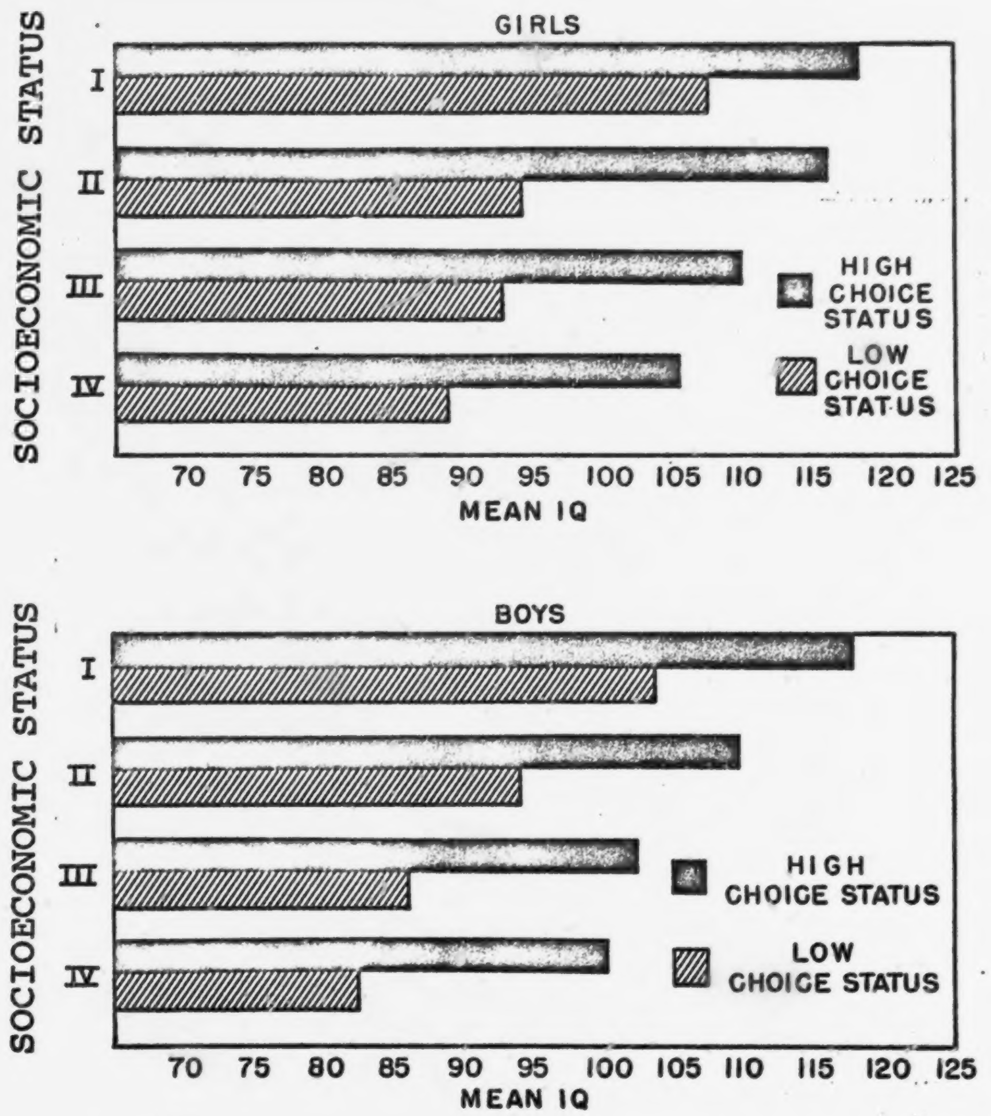

Fig. 1. The IQ and choice status of girls and boys in relation to socioeconomic background

general pattern of differences between high and low choice groups at the different socioeconomic levels. Inspection of Fig. 1 shows the same pattern of results for girls and for boys at different socioeconomic levels. At all four levels the differences between the high and low groups for both sexes are about the same.

In terms of IQ points, there is a difference of about 15 to 20 points between the high and low choice status groups at various socioeconomic levels. The only exception to this is in the top socioeconomic group where the differences for girls and boys are only 11.5 and 14.3 points, respectively. The smaller standard deviations of these groups suggest that the test may not have had sufficient ceiling for these groups.

This result is in line with the impressions obtained from earlier work with childhood case histories. A child of either sex with an IQ of 80 in a low socioeconomic group is at a real social disadvantage. Similarly, a child with an IQ of 100 in an upper socioeconomic group is also at a disadvantage. An intelligence level above the average of the peer group is an asset in a wide variety of groups.

Texas Study

The study of peer choice scores in relation to intelligence and SES in the Texas sample followed a design quite different from that in the Minnesota sample reported above.

Whereas a large sample in one grade (grade 4) from one Minnesota city in which detailed SES analyses had already been made permitted the type of comparison shown in Fig. 1, no similar data were available for any subsample in Texas, where the districts included ranged from small to medium small in size and where schools frequently serve areas of greater geographic extent and greater SES heterogeneity.

This report represents an effort to present the data available from schools that continued in the second year of the general study, using SES estimates obtained from 1960 Census reports for census tracts served by the respective schools. SES differentiation of areas within communities was not feasible, as in the Minnesota study. Instead, means of districts varying in SES are presented.

As a result of the constraints experienced with the Texas data, it was convenient to correlate peer scores with IQ for a number of different tests used by different school districts. These data are not pooled, but the comparisons presented indicate trends generally in agreement with the Minnesota data. Furthermore, the correlations, including the entire sample, in each case, rather than only the segments above and below one standard deviation from the mean, permit estimates of fractions of variance in peer scores accounted for by intelligence tests. Although a wider range of grades is included than in the Minnesota study, the use of age-independent IQ measures guards against inflation of the correlation coefficients.

Results. Table 56 presents the means and standard deviations of IQ for six school districts in relation to SES. A seventh school district, Abilene, for which IQ data were transcribed, was omitted because adequate data were not available at the time to classify its eleven schools by SES, and the composite was considered too heterogeneous for the type of analysis required. The six districts are listed in approximate order of SES, although a reversal occurs between Castleberry and Breckenridge on Median Educational Level of Adults. These six districts fall into discrete intervals with Everman highest (median education, 12.8 years and median family income, $7,797.), Castleberry and Breckenridge in the middle (median education 10.4 to 11.8 years, median income $4,752. to $5,300.), and Bonham, McKinney, and the three schools from Waco forming the low group (median education 8.3 to 9.3 years, median income $3,530. to $3,988.). Six different test forms were used in the samples reported, and the proportions of boys and girls in the subsamples varied. The variation in mean IQ due to these factors is not controlled. Nevertheless the results follow the general pattern demonstrated in the Minnesota study and widely reported in the literature, with the mean IQ's generally ordered in proportion to SES level.

Table 56. Mean and standard deviation of IQ for six school districts varying in SES level, tests used, and proportions of boys and girls. Texas, Year II data.

SES Measures					IQ	
Med.Educ. Adults	Med.Income, Families	School District	Intelligence Test	No. Cases	Mean	S.D.
12.6	$7797.	Everman	CTMM Prim.	47	117.8	14.93
10.8	$5300.	Castleberry	CTMM Elem.	586	112.2	14.50
11.4	$4752.	Breckenridge*	Henmon-Nelson	145	106.2	15.90
			Lorge-Thorndike-C	223	103.7	11.02
9.3	$3988.	Bonham	Otis Alpha	208	103.4	12.03
			Henmon-Nelson	237	104.5	13.27
9.1	$3905.	McKinney*	CTMM Elem.	372	98.4	15.59
			CTMM Jr.H.	193	104.2	14.31
8.3	$3530.	Waco*	CTMM Prim.	102	92.5	14.39
			CTMM Elem.	466	98.9	14.02

*Waco is represented in this study by three schools; these data do not depict the entire school population of this city. The Breckenridge, McKinney, and Waco samples each include one Negro school along with the White school samples.

Correlations of IQ with five peer status scores and with school grades are shown in Table 57 for samples based on four intelligence tests for boys and girls, separately and combined. These data are based on five school districts, Year II data, which had samples of sufficient size to provide stable relationships. SES is not differentiated in Table 57. Although there are variations related to test and other factors affecting subsamples, the overall results are quite similar for LM and LL. The average correlations are about .24 for LM, .21 for LL, and .26 for LD. IQ accounts for 5, 4, and 7 per cent of the variance in LM, LL, and LD respectively, in these samples, but these estimates are not considered independent. As might be expected from the earlier discussion of the relationships between LM and LL among boys and girls, the correlations of IQ with LM are higher for girls than boys, and this relationship is reversed for LL, although the differences are slight.

The correlations of IQ with TR are higher than with the peer choice scores, averaging around .36. It may be assumed that teachers have fairly stable impressions of the intellectual levels of their pupils, even when they have not had test scores available, and that these impressions are more influential in their ratings than are similar factors in the peer choices of their pupils. This observation gains some support from the correlations of IQ with school grades,

Table 57. Correlations of IQ's obtained from a number of tests with peer status scores and school grades, for boys and girls separately and combined. Data based on five Texas school districts, Year II. Grade range 4-7.

Test	No. Cases	Correlation of IQ with: LM	LL	LD	TR	DT	School Grades
Boys							
CTMM - Elem.	740	.21	.18	.23	.33	.29	.56
Henmon-Nelson	186	.21	.19	.22	.29	.27	.78
Lorge-Thorndike - A	552	.22	.25	.27	.36	.32	.64
Lorge-Thorndike - C	105	.23	.09	.20	.36	.28	.56
Girls							
CTMM - Elem.	722	.28	.20	.28	.35	.34	.59
Henmon-Nelson	196	.13	.19	.18	.37	.27	.73
Lorge-Thorndike - A	597	.26	.19	.26	.37	.31	.63
Lorge-Thorndike - C	118	.34	.14	.29	.40	.33	.76
Combined							
CTMM - Elem.	1462	.24	.19	.26	.34	.31	.57
Henmon-Nelson	382	.17	.18	.20	.32	.27	.75
Lorge-Thorndike - A	1149	.24	.23	.26	.37	.32	.64
Lorge-Thorndike - C	223	.28	.11	.24	.38	.30	.66

assigned by the same teachers, which are somewhat higher than expected.

In Table 58, relations among IQ, SES, and school grades are analyzed, using information from three school districts in which the same intelligence test was administered. The range of SES covers only the middle and low categories in Table 56. However, the samples are of good size for both sexes and the data are comparable. This table presents means and standard deviations for IQ and school grades, correlations of both IQ and school grades with peer scores, and the correlations of IQ with school grades. The test on which IQ's are based is the California Test of Mental Maturity, Elementary Form.

These data follow generally the trends displayed in the preceding two tables. With the exception of the Waco schools, which are lowest in SES, the mean of girls are higher than those of boys on IQ and grades. The correlations of school grades with peer scores are higher than the corresponding correlations with IQ, and the correlations of both with TR are highest of all in their respective sets. In these three districts, school grades are almost as good a measure of the teachers' ratings of peer relations as they are of academic performance. Although the correlation of TR with grades is reduced when the effect of IQ is partialled out (for example, the correlation of TR with grades for boys in Castleberry,

Table 58. Means and standard deviations of IQ and school grades; correlations of IQ and school grades with peer scores and each other. Boys and girls separately for three Texas school districts differing in SES.

Mean and S.D. IQ and School Grades in Relation to SES Measures

School District	SES Indicators Median Educ.	 Med.Fam. Income	No. Cases	Sex	IQ Mean	 S.D.	School Grades Mean	 S.D.
Castleberry (2 schools)	10.8	$5300.	291	Boys	111.3	16.6	79.1	9.68
			295	Girls	113.7	14.0	84.2	9.81
McKinney (5 schools)	9.1	$3905.	188	Boys	97.2	15.8	80.6	8.42
			184	Girls	98.7	15.4	84.1	9.04
Waco (3 schools)	8.3	$3530.	237	Boys	98.9	14.8	75.2	8.83
			229	Girls	98.9	13.7	77.7	9.74

Correlations of Peer Scores with IQ and School Grades

School District	Variables	LM Boys	 Girls	LL Boys	 Girls	LD Boys	 Girls	TR Boys	 Girls	DT Boys	 Girls
Castleberry	IQ	.22	.34	.20	.20	.24	.32	.38	.39	.31	.38
	Sch. Grades	.35	.42	.33	.37	.40	.47	.53	.52	.47	.54
McKinney	IQ	.30	.39	.24	.32	.32	.44	.33	.45	.37	.50
	Sch. Grades	.38	.46	.29	.31	.41	.45	.45	.51	.47	.52
Waco	IQ	.23	.35	.14	.27	.21	.36	.44	.49	.31	.43
	Sch. Grades	.24	.26	.29	.29	.29	.32	.38	.44	.34	.36

Correlations of IQ with School Grades

	Castleberry	McKinney	Waco
Boys	.62	.65	.50
Girls	.66	.66	.48

of .53, is reduced to .40 when IQ is partialled out), the resulting partial correlation coefficients are substantial.

Summary. The Texas data on relations of peer scores to IQ and SES, although not as manageable for the study of joint effects as the Minnesota data analyzed in the preceding section, nevertheless demonstrate confirmatory evidence that peer acceptance-rejection is substantially related to both variables. Correlations with SES measures were not possible. Correlations with IQ measures on different tests suggest that IQ accounts for about 7 per cent of the variance in LD, although this is not believed to be an independent contribution. Peer scores correlate more highly with school grades than with IQ, and the data suggest that both IQ and peer relations account for significant variance in school grades.

PEER ACCEPTANCE-REJECTION AND SCHOOL GRADES

In the preceding section, in Table 58, data were presented on the relation of peer scores to school grades, which are higher than the corresponding correlations with IQ. The data in this section present additional correlations between school grades and peer scores for a larger sample from the seven Texas districts included in Year II and are included primarily to demonstrate three relationships that appear to deserve further study, although funds were not bedgeted for this purpose in the present study. These three relationships are: (1) The relative contributions of LM, LL, and TR to school grades, (2) sex differences in contributions of these variables to school grades, and (3) grade level differences in correlations of these peer scores with school grades.

Subjects. In 1963 it was possible, in conjunction with other work, to transcribe from school records end-of-year school grades of 3,774 pupils in grades 4 through 7 in seven Texas school districts which had continued in the general study through the second year. The letter grades were converted to quantitative scores using the following numerical equivalents: A 95, B 85, C 75, D 65, and F 55. The average grade scores were correlated with Year II peer scores.

Results. The means and standard deviations of average school grades for boys and girls in the sample, by grade level in school, and correlations of school grades with the five peer scores, are presented in Table 59.

Relative Contributions of LM, LL, and TR to School Grades. As shown in Table 59, the correlations of these three variables with school grades follow a consistent pattern across all grade levels. First, the LM correlations exceed the LL correlations at all grade levels, suggesting that to the limited extent to which such information may have influence on grading, teachers appear to be more responsive to liking patterns of children than to dislike patterns.

Table 59. The association of peer acceptance-rejection and school grades, Texas Sample, Year II.

			School Grades		Correlations[b] of School Grades with				
Grade	Sex	N	Mean[a]	S.D.	LM	LL	LD	TR	DT
4	Boys	648	81.6	9.32	.37	.34	.42	.52	.49
4	Girls	670	85.5	9.00	.41	.35	.44	.46	.49
5	Boys	627	79.9	9.88	.31	.26	.34	.39	.38
5	Girls	632	85.6	10.22	.31	.29	.34	.40	.38
6	Boys	286	80.4	9.84	.26	.21	.27	.31	.31
6	Girls	296	82.9	9.69	.25	.22	.27	.44	.37
7	Boys	309	80.8	9.60	.28	.15	.26	.28	.31
7	Girls	305	83.1	9.47	.29	.23	.29	.40	.34
Total	Boys	1870	80.7	9.66	.32	.26	.34	.40	.39
Total	Girls	1903	84.1	9.66	.33	.29	.35	.42	.41
Combined Total		3773	82.4	9.81	.33	.27	.35	.41	.40

[a] At each grade level the means for girls are significantly greater than the means for boys, $p<.01$.

[b] All correlations are significantly greater than zero, $p<.01$.

Second, the TR correlations uniformly equal (boys, grade 7) or exceed (the other seven cases) the peer choice score correlations at all grades. These results further suggest that peer relations information may be related to grading practices. Although the influence of intelligence, SES, ethnic, and other factors is entangled in grading, the pattern of correlations of peer scores with school grades suggests that peer relations indices make a unique contribution that can be isolated.

Sex Differences in Correlations of Peer Scores with School Grades. The interesting things about sex differences in Table 59 is that they do not appear, except for the correlations of TR with grades at grade levels 6 and 7, where the girls' correlations are higher, as expected. No discriminable differences appear among the peer rating variables. The higher mean grades of girls over boys are significant at the .01 level at each grade level and for the total sample, but, except for the exceptions noted, there are no differences in correlation with peer scores.

Grade Level Differences in Correlations of Peer Scores with School Grades. The trend of the correlations with school grades in Table 59 is one of dropping off from the earlier to later grades. For LD, the average correlations of boys and girls with school grades are: grade 4, .43; grade 5, .34; grade 6, .27; and grade 7, .28. The per cent of common variance (r^2) reflected by these correlations reduces from 18 at grade 4 to 8 at grades 6 and 7. Apparently, social relations, implicit in the measures of peer acceptance-rejection, are most influential in grading in the early grades and gradually lose influence as the curriculum becomes more content-oriented. This factor needs to be considered in studies relating abilities and cognitive performance measures to school grades.

Summary. Brief review of data relating peer scores to school grades reveals the following relationships believed worthy of further study. (1) The pattern of correlations of peer scores with school grades suggests that peer relations make a unique contribution to grades that can be isolated. (2) Sex differences were almost totally absent in the correlations, although mean grades for girls were significantly higher than those for boys at every grade level. (3) The correlations between peer scores and grades fall off constantly from grade 4 to grade 7, suggesting that the influence of peer relations on teacher grades is not constant, but rather declines above the early elementary grades.

PEER ACCEPTANCE-REJECTION IN RELATION TO MINORITY ETHNIC STATUS, STUDY OF CHILDREN WITH SPANISH SURNAMES

With the exception of Negro children in segregated schools in Texas, neither ethnic nor racial identifications were available in the school records in either state, and such identifying data could not be incorporated in the forms used routinely in the survey. However, it was possible, in the Texas data, to identify a minority ethnic sample having Spanish surnames, and a special study of this group is reported in this section. A study of Negro children in segregated schools appears in the following section.

Purpose

Traditionally, the Mexican-American has been a rejected ethnic minority in the transitional areas along the Mexican border. Differences in education and socioeconomic status have magnified and colored the considerable cultural differences between Anglo- and Latin-Americans in these areas. Despite progress in many respects in recent years, prejudice against Mexican-appearing individuals, who are commonly identifiable by appearance, speech, area of residence, and other indicia, is believed still to be widespread. The purpose of this study was to evaluate the effect of such prejudice among school children on the measures of peer acceptance-rejection. Segregation of minorities in separate schools was confined only to Negroes. Spanish-American children attended the same public schools as Anglo- children, the only segregation being by area of residence. Thus in this study, Spanish- children were rated in mixed Anglo- and Spanish- classes.

Subjects

This study is based on Year I peer ratings. Two Spanish-speaking assistants reviewed independently the entire Texas roster and checked all surnames that they considered Spanish. Those on whom the two agreed were retained for the purpose of this study. It is believed that most of the children thus identified were of Mexican-American parentage. However, for a variety of reasons, a small number of errors must be expected. The number of omissions is also believed to be small. The cost of going back to the schools to check the classification was not considered worth the additional accuracy to be gained by this effort. Of the total sample of 72 schools in 19 school districts, one district (Hurst), with 11 schools, was excluded because LL nominations were not made, and two districts had no children with Spanish surnames. The final sample consisted of 640 children with Spanish surnames in 49 schools in the remaining 16 Texas school districts.

Demographic information, based on the 1960 U.S. Census, was abstracted for the census tracts or county census divisions in which the 49 schools were located. The 1960 Census Reports included estimates, based on a 25 per cent sample, of the per cent of families with Spanish surnames. For the 49 schools in the present study, these estimates range from zero to 62 per cent for census units, with a median per cent of 3.1. For the total Texas sample for Year I the median value was 2.7 per cent. Based on the total number of 19,617 Texas children in the first-year survey, the 640 children selected represent 3.26 per cent of the Texas sample. This figure is close to the Census estimate.

Other demographic data derived from the 1960 Census reports enable evaluation of the mean and range of socioeconomic level of the 49 schools in this study. As shown in Table 60, the schools with Spanish surname children are slightly below the total sample in socioeconomic level measured by median income of families and by median educational level of adults.

Procedure

In order to control for socioeconomic background, each child with a Spanish surname was paired with a randomly selected classmate of the same sex, not in the "Spanish" list. This procedure produced two paired samples, Spanish and Anglo, each consisting of 640 children with data available on LM, LL, and LD. For these samples, teacher ratings were not completed on 21 of the Spanish and 13 of the Anglo children.

In addition to the peer scores, two additional variables were recorded for each child. First, the 49 schools were classified on the basis of location in or out of a metropolitan area; this enabled a classification by large

Table 60. Comparison of measures of socioeconomic status for 49 schools having children with Spanish surnames with the 72 schools which comprise the Texas first-year sample. Data from U.S. Censuses of Population and Housing, 1960.

	Spanish Surname Sample (49 schools)			Total Texas Sample (72 schools)		
		Range			Range	
Socioeconomic Status Measure	Mean	Low	High	Mean	Low	High
Median Annual Income, Families	$4566.	$2935.	$9250.	$5118.	$2733.	$9250.
Median Years Education, Adults	10.1	8.3	13.2	10.6	8.0	13.2

community (in) or small community (out). Second, each child received a code reflecting the number of Spanish surname children in his class. These variables were expected to have analytic significance. The classification by size of community was expected to relate to peer scores in the same manner as SES and to suppliment the control for SES achieved by the pairing of cases. The number of Spanish children in a class was included in order to investigate the existence and possible effects of minority or majority cliques in classrooms.

Results

Gross Results. The mean peer scores of the paired total groups and of subgroups representing large and small communities are shown in Table 61. The Spanish children are lower than the Anglo children on all comparisons and significantly so on all but one, LL in the small-community subsample. Except for that one case in which the Spanish sample mean approaches closely to the corresponding Anglo-mean, the differences between the large and small community subsamples are insubstantial, and none are significant, including LL.

From Table 61, it is apparent that the Spanish-Anglo comparisons on LM and LL are different. The order of means and of mean differences between the two samples suggests that the Spanish children are infrequently chosen (low on LM) but also not strongly rejected (higher on LL). In both

Table 61. Comparison of peer and teacher rating scores of Spanish surname and Anglo samples paired on SES, by small and large community schools and total sample.

Peer	Spanish Surname Sample			Paired Anglo Sample			Mean	
Score	N	Mean	S.D.	N	Mean	S.D.	Difference	CR.
Small Communities (Located Outside Metropolitan Areas)								
LM	153	4.72	.80	153	5.14	1.04	.42	3.96**
LL	153	4.91	1.06	153	5.00	.94	.09	.71
LD	153	4.76	.91	153	5.08	.99	.32	2.92**
TR	149	4.78	.71	153	5.00	.76	.22	2.68**
DT	149	4.73	.88	153	5.06	.99	.33	2.99**
Large Communities (Located in Metropolitan Areas)								
LM	487	4.75	.87	487	5.16	1.00	.41	6.92**
LL	487	4.88	.98	487	5.06	.96	.18	2.89**
LD	487	4.77	.90	487	5.14	.99	.23	6.15**
TR	470	4.83	.73	474	5.14	.81	.31	6.34**
DT	470	4.74	.89	474	5.16	1.00	.42	6.89**
Total Sample								
LM	640	4.74	.85	640	5.16	1.01	.42	7.97**
LL	640	4.89	1.00	640	5.05	.95	.16	2.86**
LD	640	4.76	.90	640	5.12	.99	.36	6.79**
TR	619	4.81	.72	627	5.11	.80	.30	6.81**
DT	619	4.74	.89	627	5.14	1.00	.40	7.58**

**$p < .01$

subsamples, as well as the total sample, the means of LL exceed those of LM for Spanish children, and the reverse holds for Anglo children. As a result, the differences between the Spanish and Anglo children are about three times as great on LM as on LL. Further, the differences between LM and LL are significantly greater than zero for the total sample of Spanish surname children. Using .52 as an estimate of the correlation between LM and LL as found for the total first year sample, the computed tests of significance indicate that the mean LM z-scores are significantly lower than the mean LL z-scores. For Spanish surname boys, the critical ratio is 2.16 ($p < .05$), and for girls it is 3.75 ($p < .01$). For the total Spanish surname sample, the critical ratio is 4.12 ($p < .01$). These data for boys and girls combined suggest that children in this minority ethnic group are not strongly rejected by their peers, but neither are they accepted in the peer group.

Teacher Rating Raw Scores. The inference that Spanish children tend to be low in acceptance (LM) rather than strongly rejected (LL) by peers is supported by the teachers' estimates of peer acceptance-rejection. The distributions of raw score teacher ratings on a four-point scale are shown in Table 62.

The percentages of children rated as (3) Tends to be Rejected or (4) Strongly Rejected, were 12 and 11 for the

Table 62. Comparison of teachers rating raw score frequency distributions of Boys and Girls with Spanish surnames and with Anglo surnames, in the Texas Sample.

Teacher Rating Cagegories (Year I)	Boys				Girls				Total Group			
	Spanish		Anglo		Spanish		Anglo		Spanish		Anglo	
	N	(Per cent)	N	(Per cent)	N	(Per cent)	N	(Per cent)	N	(Per cent)	N	(Per cent)
1 - Highly Accepted	56	(19)	89	(30)	33	(10)	100	(31)	89	(14)	189	(30)
2 - Accepted	213	(71)	173	(57)	241	(75)	200	(62)	454	(74)	373	(59)
3 - Tends to be Rejected	21	(7)	34	(11)	37	(12)	21	(6)	58	(9)	55	(9)
4 - Strongly Rejected	8	(3)	7	(2)	10	(3)	3	(1)	18	(3)	10	(2)
Total	298	(100)	303	(100)	321	(100)	324	(100)	619	(100)	627	(100)
Mean	1.94[a]		1.86[b]		2.07[a]		1.77[b]		2.01		1.82	
S.D.	.60		.69		.58		.60		.59		.65	
CR (Ethnic Groups)	1.38ns				6.55, p<.01				5.39, p<.01			

[a] Indicates difference between means for Spanish Surname Boys and Spanish Surname Girls is significant, CR = 2.95, p<.01.

[b] Indicates differences between means for Anglo Surname Boys and Anglo Surname Girls is significant, CR = 1.76, p<.05 (one tailed test).

Spanish and Anglo groups, respectively. Percentagewise, fewer Spanish than Anglo boys received teacher ratings which denote rejection, while fewer Anglo girls than Spanish girls received ratings in these two categories. Teacher ratings of Highly Accepted were awarded to Spanish children (14 per cent) less frequently than to Anglo children (30 per cent). These data agree with the peer ratings on LM and indicate teacher agreement with the peer choice results.

Sex Differences. Significant differences between mean scores of Spanish boys and Spanish girls on LM, LL, and TR are reported in Tables 64 to 66. Since these variables yielded significant sex differences, comparisons on LD and DT are not needed. In each comparison, the data indicate that Spanish boys tend to have more favorable relations with their same-sex peers than do Spanish girls. In order to investigate the presence of an interaction effect between surnames and sex, a 2x2 unweighted means analysis of variance was computed for LD which maximizes the joint effects of LM and LL. The results, summarized in Table 63, show significant main effects for ethnic group (Spanish vs Anglo surname) and for sex (boy vs girl), but the interaction between surname and sex was not significant.

Size of Community. Tables 61 and 64 through 66 show no significant mean differences on any of the peer scores attributable to size of community. In order to determine

Table 63. Analysis of variance on LD by surname (Spanish vs Anglo) and sex (boy vs girl).

Source	SS	df	MS	F
A (surname)	40.93	1	40.93	24.5*
B (sex)	11.90	1	11.90	7.1*
AB (surname x sex)	3.58	1	3.58	2.14
Within cells	2131.97	1276	1.67	

*$p<.01$

Table 64. Comparison of LM z-scores of boys and girls with Spanish and Anglo surnames.

No. Span. Surname Pupils in Class-Group	Boys							Girls						
	Spanish			Anglo				Spanish			Anglo			
	N	Mean	S.D.	N	Mean	S.D.	CR	N	Mean	S.D.	N	Mean	S.D.	CR
Small Communities (Located Outside Metropolitan Areas)														
1	42	4.93	.79	42	5.09	.93	0.9	29	4.67	.96	29	5.32	.88	2.7**
2	14	4.67	.52	14	4.90	.99	0.8	22	4.68	.73	22	5.43	1.01	2.8**
3 or 4	15	4.91	.92	15	5.14	1.28	0.6	20	4.32	.48	20	4.80	1.15	1.7*
5 or more	None			None				11	4.62	.79	11	5.15	1.05	1.3
Total	71	4.87	.87	71	5.06	1.03	1.2	82	4.58	.79	82	5.20	1.09	4.1**
Large Communities (Located in Metropolitan Areas)														
1	56	4.92	.96	56	5.33	.98	2.2**	49	4.48	.68	49	5.28	1.09	4.3**
2	28	4.85	1.06	28	5.18	.95	1.1	40	4.45	.70	40	5.02	1.08	2.8**
3 or 4	70	4.92	.91	70	5.11	1.03	1.1	83	4.63	.78	83	5.10	.92	3.6**
5 or more	86	4.85	.89	86	5.23	.97	2.7**	75	4.75	.81	75	5.07	1.00	2.1**
Total	240	4.89	.94	240	5.21	.99	3.7**	247	4.61	.77	247	5.12	1.01	6.3**
Combined Total	311	4.88^a	.90	311	5.18	1.01	3.8**	329	4.60^a	.77	329	5.14	1.01	7.6**

* p<.05

**p<.01

[a] Indicates difference between means for Spanish Surname Boys and Spanish Surname Girls is significant, CR = 4.23, p<.01.

Table 65. Comparison of LL z-scores of boys and girls with Spanish and Anglo surnames.

No. Span. Surname Pupils in Class-Group	Boys							Girls						
	Spanish			Anglo				Spanish			Anglo			
	N	Mean	S.D.	N	Mean	S.D.	CR	N	Mean	S.D.	N	Mean	S.D.	CR
Small Communities (Located Outside Metropolitan Areas)														
1	42	5.23	.90	42	4.99	.86	0.0	29	4.58	1.27	29	5.05	.75	2.6**
2	14	5.17	.62	14	4.88	1.06	0.0	22	4.67	1.22	22	5.16	.82	2.3**
3 or 4	15	4.83	1.16	15	5.25	.94	1.0	20	4.96	.95	20	4.60	1.18	1.1
5 or more	None			None				11	4.76	.82	11	5.07	.96	1.3
Total	71	5.13	.92	71	5.02	.93	0.7	82	4.72	1.14	82	4.97	.94	1.5
Large Communities (Located in Metropolitan Areas)														
1	56	4.98	.89	56	5.15	.93	1.8*	49	4.91	.93	49	5.08	1.05	0.8
2	28	4.97	.89	28	5.09	1.00	1.0	40	4.55	1.33	40	5.01	.95	1.8*
3 or 4	70	5.08	.88	70	5.03	.99	0.8	83	4.78	.92	83	4.93	.92	1.0
5 or more	86	4.84	1.03	86	5.17	.83	3.2**	75	4.90	.93	75	5.05	1.03	1.0
Total	240	4.96	.95	240	5.12	1.03	1.7*	247	4.81	1.02	247	5.01	.97	2.2*
Combined Total	311	5.00[a]	.94	311	5.09	1.01	1.2	329	4.79[a]	1.04	329	5.00	.98	2.7**

* $p<.05$
**$p<.01$

[a] Indicates difference between means for Spanish Surname Boys and Spanish Surname Girls is significant, CR = 2.73, $p<.01$.

Table 66. Comparison of TR z-scores of boys and girls with Spanish and Anglo surnames.

No. Span. Surname Pupils in Class-Group	Boys							Girls						
	Spanish			Anglo				Spanish			Anglo			
	N	Mean	S.D.	N	Mean	S.D.	CR	N	Mean	S.D.	N	Mean	S.D.	CR
Small Communities (Located Outside Metropolitan Areas)														
1	41	5.05	.67	42	4.89	.89	0.9	29	4.68	.79	29	5.13	.56	2.2*
2	13	4.94	.67	14	4.45	.62	1.7*	21	4.80	.76	22	5.21	.76	1.7*
3 or 4	14	4.70	.10	15	5.16	.78	2.2*	20	4.40	.54	20	4.98	.58	3.0**
5 or more	None			None				11	4.48	.87	11	5.22	.67	2.2*
Total	68	4.96	.62	71	4.86	.85	0.8	81	4.63	.75	82	5.13	.65	4.5**
Large Communities (Located in Metropolitan Areas)														
1	54	4.78	.80	55	5.18	.81	2.5**	47	4.75	.71	48	5.27	.81	3.3**
2	26	5.01	.57	26	4.90	1.03	0.5	39	4.73	.57	39	5.05	.80	2.0*
3 or 4	68	4.94	.80	67	5.28	.75	2.5**	81	4.83	.56	81	5.18	.84	3.1**
5 or more	82	4.86	.76	84	5.00	.73	1.2	73	4.75	.71	74	5.17	.75	3.4**
Total	230	4.88	.77	232	5.11	.81	3.1**	240	4.77	.67	242	5.17	.80	5.9**
Combined Total	298	4.90[a]	.74	303	5.05[b]	.82	2.4**	321	4.74[a]	.70	324	5.16[b]	.77	7.4**

* $p<.05$
**$p<.01$

[a] Indicates difference between means for Spanish Surname Boys and Spanish Surname Girls is significant, CR = 2.80, $p<.01$.

[b] Indicates difference between means for Anglo Surname Boys and Anglo Surname Girls is significant, CR = 1.73, $p<.05$ (one tailed test).

whether there was an effect attributable to the interaction of ethnic group and community size, a two-way analysis of variance with unweighted means was computed for boys and girls separately, using the LD score. The results, summarized in Table 67, show that only the main effect of ethnic group (surnames) was significant.

Effects of "Cliques". The data were next ordered and analyzed in relation to the effects of the numbers of boys or girls with Spanish surnames in the classes. The number of Spanish children per class-group ranged from 1 to 8, and class-groups were arbitrarily clustered as follows: 1, one per class; 2, two per class; 3, three or four per class; and 4, five to eight per class.

Analysis of the mean peer scores of the four categories of class-group failed to reveal any consistent association between peer status and the number of Spanish surname children in the class-group. A two-way analysis of variance with unweighted means produced no significant main effect for this dimension, as shown in Table 68. Thus there was no evidence that boys and girls with Spanish surnames vote as "cliques" in making peer selections.

Correlation of Ethnic Group with Peer Status. Point biserial correlations reported in Table 69 were computed in order to evaluate the magnitude of the association between ethnic group and peer status. The correlations on LM, LL,

Table 67. Analysis of variance between surname (Spanish vs Anglo) and community size (large vs small) on the LD peer score.

Source	SS	df	MS	F
	Boys			
A Surname	4.16	1	4.16	4.74*
B Community	.15	1	.15	.18
AB Surname x Comm.	1.35	1	1.35	1.53
Within cells	542.93	618	.88	
	Girls			
A Surname	25.48	1	25.48	29.35**
B Community	.09	1	.09	.10
AB Surname x Comm.	.19	1	.19	.22
Within cells	567.74	654	.87	

* $p < .05$
**$p < .01$

Table 68. Analysis of variance of Sex (boys vs girls) and Density (Spanish surname children in classroom) on a sample of 487 children with Spanish surnames.

Source	SS	df	MS	F
A Sex	9.44	1	9.44	12.00*
B Density	2.09	3	.70	.88
AB (Sex x Density)	3.34	3	1.10	1.40
Within cells	376.74	479	.79	

*$p < .01$

Table 69. Point biserial correlations between Spanish vs Anglo ethnic group status and measures of peer acceptance-rejection, for Boys and Girls.

	Point Biserial Correlations				Per cent of Variance Associated with Ehtnic Group Status	
	Boys		Girls			
Variable	N	$r_{p\ bis}$	N	$r_{p\ bis}$	Boys	Girls
LM	622	.15**	658	.28**	2.3	7.9
LL	622	.05	658	.11**	0.2	1.1
TR	601	.10*	645	.28**	1.0	7.6

* $p<.05$
**$p<.01$

and TR are all significant at the .01 level for girls. For boys, the LL correlation is not significant, and the TR correlation is marginally significant. These correlation coefficients elaborate the information presented above in the analysis of mean differences and make possible estimates of variance fractions in peer scores accounted for by ethnic status. These estimates appear in the right hand part of Table 69 and range from .2 per cent (LL) to 2.3 per cent (LM) for boys and from 1.1 per cent (LL) to a substantial 7.9 per cent (LM) for girls. The lesser proportion of variance accounted for by LL, as compared with LM, further helps to characterize the nature of the "prejudice" against Mexican-American children by Anglo children in the North Texas communities represented in this study. It is expressed mainly by withholding of positive (LM) choices and is considerably stronger in girls than in boys. The data for Teacher Ratings in Table 69 show that the behavior reflecting these attitudes among the Anglo children is clearly perceived by teachers.

Summary

The results of this study support the expectation of prejudice against the Mexican-American minority by Anglo children as expressed in peer ratings. However, this prejudice does not appear to take the form of outright rejection, as is sometimes found, but rather the withholding of positive choice. Translated into overt behavior, however, this might be equivalent to "shunning," which is experienced by its recipients as equivalent to rejection. This reaction is conspicuous in girls' ratings of girls, but is comparatively mild in boys' ratings of boys. No significant effects attributable to size of community or to number of Spanish children in class-groups were found.

PEER ACCEPTANCE-REJECTION, INTELLIGENCE, AND SCHOOL GRADES AMONG NEGRO CHILDREN IN SEGREGATED SCHOOLS

No data are available in this Study on interracial rating, inasmuch as racial identification in integrated schools could not be made from school records, and other means of identification were not feasible in the communities studied. However, data were available on peer choice and teacher rating scores, intelligence test scores, and school grades, for 334 Negro pupils in three Texas school districts which maintained separate, segregated schools for Negroes at the time of the Study. This section presents an analysis of these data which demonstrates that relationships within the all-Negro sample are patterned in essentially the same manner as those already reported for the general (predominantly White) school population. A comparison with White samples from the three selected districts is included.

Subjects

This analysis is based on second-year data. Peer and teacher rating scores were collected in May, 1963, near the close of the 1962-1963 school year. The most recent intelligence test scores and end of semester school grades were transcribed from school records during the Summer of 1963. One district with 22 Negro pupils used the Henmon-Nelson Intelligence Test, Form A; the other two with a combined total of 312 Negro pupils used various forms of the California Test of Mental Maturity. In both districts, the same tests had been administered to some grades in White schools. A summary of the Negro and White samples in the three districts appear in Table 70.

Procedure

For each test sample, separately, total IQ scores for the combined White and Negro population available were pooled and converted to standard scores with a mean of 100 and standard deviation of 20. Standard scores on the Henmon-Nelson and California tests were used jointly in "high-low" analyses. Teacher grades were converted to numerical scores with the following equivalents and averaged: A 95, B85, C 75, D 65, F 55.

High and low Negro and White children were identified on the basis of peer status z-scores. In each case, "high" was identified as exceeding one standard deviation above the mean of the LD scale and "low" as exceeding one standard deviation below the mean. The "middle" group was then the

Table 70. Number of Negro and White pupils and identification of intelligence tests administered, three Texas school districts operating segregated schools in 1962-1963.

District	Intelligence Test	Number of Pupils		
		Negro	White	Total
Breckenridge (3 schools)	Henmon-Nelson, Form A	22	123	145
McKinney (5 schools)	Calif. Test of Ment. Matur., Elem.	92	280	372
	Calif. Test of Ment. Matur., Jr. H.	16	177	193
Waco (3 schools)	Calif. Test of Ment. Matur., Elem.	204	363	567

residual between one standard deviation above and below the mean.

For comparison of peer status with other variables, the LD and TR scores were used. Tables were constructed to analyze effects of intelligence, peer acceptance-rejection, sex, race, and school grade.

Results

The results presented in Tables 71 through 77 demonstrate significant differences between Negro and White pupils with respect to mean IQ, but almost identical patterning among Negro and White pupils in respect to the relationships of IQ and school grades to the peer status measures.

Tables 71 and 72 summarize the relationships with reference to intelligence. Means and standard deviations are given in Table 71 and the tests of significance in Table 72. The rank order of mean IQ varies with peer status level in the same direction for each race-sex group even though the overall difference in mean standard score between the Negro and White pupils is 10 points. As shown in Table 72, however, the differences between the high and middle group for Negro boys and between the middle and low groups for Negro girls do not reach significance, while all differences between peer status levels are significant for White boys and girls. It should be noted, however, that the range of

Table 71. Comparison of Negro and White boys and girls of High, Middle, and Low peer status on intelligence standard scores.

Peer Status	Sex	Negro No. Pupils	Negro Mean	Negro S.D.	White No. Pupils	White Mean	White S.D.
High	Boys	31	97.9	17.2	94	106.6	21.3
	Girls	31	99.9	16.1	91	111.4	16.0
Middle	Boys	110	92.9	18.6	306	102.5	19.5
	Girls	112	92.2	16.2	306	103.1	17.3
Low	Boys	26	84.3	20.1	77	96.3	24.2
	Girls	24	88.4	20.4	69	89.7	17.8
Total	Boys	167	92.5	18.0	477	102.9	17.8
	Girls	167	93.1	17.1	466	102.7	18.5

Table 72. Eveluation of differences within and between race, sex, and peer status groups on intelligence standard scores.

I. Between Peer Status Levels for Comparable Race and Sex Groups

		Boys		Girls	
Race	Peer Status Groups	D	CR	D	CR
Negro	High vs Middle	5.0	1.40ns	7.7	2.35**
	Middle vs Low	8.6	1.99*	3.8	.86ns
White	High vs Middle	4.1	1.67*	8.3	4.26**
	Middle vs Low	6.2	2.09*	13.4	5.68**

*p<.05, **p<.01, one tail test.

II. Between Sexes for Comparable Race and Peer Status Groups

	Peer Status Groups							
	Total		High		Middle		Low	
Race	D	CR	D	CR	D	CR	D	CR
Negro	.6	.31ns	2.0	.47ns	-.7	0.30ns	4.1	.71ns
White	-.2	.17ns	4.8	1.74ns	.6	0.40ns	-6.6	1.89ns

ns indicates p<.05, two tail test.

III. Between Races for Comparable Sex and Peer Status Groups

	Peer Status Groups							
	Total		High		Middle		Loe	
Sex	D	CR	D	CR	D	CR	D	CR
Boys	10.4	6.45**	8.7	2.29**	9.6	4.58**	12.0	2.50**
Girls	9.6	6.08**	11.5	3.44**	10.9	5.59**	1.3	.28ns

*p<.05, **p<.01, one tail test.

standard-score means from high to low groups is comparable for Negro and White boys (13.6 and 10.3, respectively) and the range for Negro girls is between these (11.5), while that for White girls is double that for White boys (21.7). The last mentioned result is accounted for by the unexpectedly low mean for the 69 low status White girls, which is 89.7, only 1.3 points higher than the corresponding Negro girl mean.

The second comparison in Table 72 shows that sex differences are generally small and inconsistent in direction. Although the mean IQ standard scores of girls exceed those of boys in four of the six comparisons, the largest difference for low status White pupils favors boys, and the differences in the middle status group which are reversed in sign for Negroes and Whites are virtually nonexistent.

The third comparison in Table 72 shows the results, already mentioned, of the IQ differences between the racial groups of comparable sex and peer status. Overall these differences are highly significant, and they exceed the .01 level for all subgroups except low peer status girls. In view of the results for Mexican-American girls in integrated classes, presented in the preceding section, and of the association of the variables studied here with minority ethnic and low sociometric status, the results for "White" girls in the low status group are believed not to be artifactual but rather to be an over-representation of minority ethnic group girls (with Spanish surnames) in that sample. A check of the roster for that group gives some support to this interpretation.

Tables 73 and 74 present comparable data for school grades with essentially the same results, except that the mean differences between Negro and White groups on school grades were significant for only the middle status groups of girls. The ordering of mean grades by peer status level is the same as for IQ, and all differences between status levels for comparable race-sex groups are significant except that between middle and low status Negro girls. The largest mean range, from high to low status groups, is for White girls.

Tables 75 and 76 follow the format of the tables for IQ and school grades, but compare Teacher Ratings of Negro and White boys and girls ordered in peer status groups by LD. The patterns of relationship in Table 75 are comparable with those examined for IQ and school grades. It is of interest that the highest group mean is that of high status Negro girls, while the lowest is for low status White girls.

The intercorrelations of IQ standard scores, school grades, TR, and LD scores are shown for the total Negro and White samples separately in Table 77. It may be noted that the pattern of correlations displayed in these two matrices is very similar.

Table 73. Comparison of Negro and White boys and girls of high, middle, and low peer status, on school grades.

Peer Status	Sex	Negro No. Pupils	Negro Mean	Negro S.D.	White No. Pupils	White Mean	White S.D.
High	Boys	31	82.1	7.7	94	82.7	8.9
	Girls	31	87.1	6.7	91	86.6	7.8
Middle	Boys	110	79.0	8.9	306	78.4	10.2
	Girls	112	79.8	8.1	306	82.1	9.2
Low	Boys	26	74.6	8.0	77	72.5	9.9
	Girls	24	77.3	7.1	69	74.5	8.6
Total	Boys	167	78.9	8.5	477	78.3	10.4
	Girls	167	80.8	8.4	466	82.0	8.5

Table 74. Evaluation of mean school grade differences within and between race, sex, and peer status groups.

I. Between Peer Status Levels for Comparable Race and Sex Groups

		Boys		Girls	
Race	Peer Status Groups	D	CR	D	CR
Negro	High vs Middle	3.1	1.91*	7.3	5.12**
	Middle vs Low	4.4	2.48**	2.5	1.55ns
White	High vs Middle	4.3	3.96**	4.5	4.61**
	Middle vs Low	5.9	4.64**	7.6	6.54**

II. Between Sexes for Comparable Race and Peer Status Groups

	Peer Status Groups							
	Total		High		Middle		Low	
Race	D	CR	D	CR	D	CR	D	CR
Negro	1.9	2.06**	5.0	2.73**	.8	.71ns	2.7	1.27ns
White	3.7	6.00**	3.9	3.17**	3.7	4.71**	2.0	1.30ns

III. Between Races for Comparable Sex and Peer Status Groups

	Peer Status Groups							
	Total		High		Middle		Low	
Sex	D	CR	D	CR	D	CR	D	CR
Boys	-.6	.74ns	.6	.36ns	-.6	.59ns	-2.1	1.09ns
Girls	1.2	1.58ns	-.5	.34ns	2.3	2.45**	-2.8	1.57ns

*p<.05, **p<.01, one tail test.

Table 75. Comparison of mean Teacher Ratings of Negro and White boys and girls, of High, Middle, and Low Peer Status.

Peer Status	Sex	Negro No. Pupils	Negro Mean	Negro S.D.	White No. Pupils	White Mean	White S.D.
High	Boys	31	5.3	.79	94	5.7	.76
	Girls	31	6.0	.79	91	5.7	.80
Middle	Boys	110	5.1	.74	306	4.9	.70
	Girls	112	5.0	.76	306	5.1	.74
Low	Boys	26	4.5	.83	77	4.5	.61
	Girls	24	4.6	.82	69	4.3	.62
Total	Boys	167	5.0	.80	477	5.0	.78
	Girls	167	5.1	.94	466	5.1	.84

Table 76. Evaluation of mean teacher rating differences within and between race, sex, and peer status groups.

I. Between Peer Status Levels for Comparable Race and Sex Groups

		Boys		Girls	
Race	Peer Status Groups	D	CR	D	CR
Negro	High vs Middle	.2	1.57ns	1.1	6.72**
	Middle vs Low	.6	3.17**	.4	1.94*
White	High vs Middle	.8	8.58**	.6	6.91**
	Middle vs Low	.4	4.86**	.7	8.79**

II. Between Sexes for Comparable Race and Peer Status Groups

	Peer Status Groups							
	Total		High		Middle		Low	
Race	D	CR	D	CR	D	CR	D	CR
Negro	.1	1.04ns	.7	3.47**	-.1	.99ns	.1	.43ns
White	.1	1.83*	.1	.50ns	.2	2.92**	-.2	1.83ns

*p<.05, **p<.01, one tail test.

Table 77. Intercorrelations of IQ standard scores, school grades, TR, and LD scores for Negro and White (combined-sex) samples.

Variables		Negro (N=334)			White (N=943)		
		2	3	4	2	3	4
IQ Standard Score	1	.55	.32	.23	.55	.36	.26
School Grades	2		.49	.34		.44	.38
TR	3			.43			.54
LD	4						

Summary

Although the Negro and White samples differed in socioeconomic background and other aspects which account for significant differences in intellectual performance on tests, the patterning of relationships between peer choice scores, IQ, school grades, and teacher ratings is essentially the same in both samples. It is concluded that the Negro sample functions comparably to that of low SES Whites, and that measures of peer acceptance-rejection for Negroes rated by Negroes are equivalent to those of Whites rated by Whites in psychological significance. In view of the "prejudice" demonstrated in ratings of pupils with Spanish surnames by other children in "White" school class-groups, presented in the preceding section, the results reported here would not be expected to show up in integrated class-groups in which Negro children are a minority. On the contrary, the "prejudice" shown against Mexican-Americans suggests that distortion of ratings of Negroes might be even greater. However, such distortion is not pure race prejudice, but reflects the complex interaction of many factors associated with socioeconomic background, residence, intellectual level, and peer attractiveness.

PEER ACCEPTANCE-REJECTION AND BIRTH ORDER

In April, 1964 a pilot study of the relations of measures of peer acceptance-rejection to birth order was published by the principal investigators (Sells and Roff, 1964b) in which the ordinal positions of youngest, only, and second child of two (a variant of youngest) were found to have significantly favorable peer status, and those of middle child, oldest, and second of more than two (a variant of middle child) were rated significantly unfavorably by peers. This exploratory study was based on a sample of 1,013 pupils from two Texas school districts and is summarized at the beginning of this section. Further data were collected in order to replicate the preliminary results. The replication report, based on data for Year I and Year II from two additional Texas school districts, is presented following the summary of the published paper. A report based on the combined data of four school districts for Year I and Year II follow the replication study. With the exception of the only child, which is a status involving factors in addition to birth order, the preliminary results are supported by the replication and by the data for the larger study.

Samples

The samples employed in the three studies are described in Table 78. The size of the Pilot Study Sample reported in Table 78 disagrees slightly with that reported in Tables 79 through 82, for the Preliminary Study. The difference resulted from excluding from the published study duplicate data for seven cases. Recomputation of the corrected data indicated that the published results were not affected.

The two school districts in the Pilot Study are located outside metropolitan areas (in Census County Divisions) and may be classified as small towns. One of the two districts, Breckenridge, included a segregated Negro school. Compared with the 82 schools in the Texas sample in Year I, the SES level of Breckenridge, based on educational level and family income reported in the 1960 census, was slightly above average. The SES level for Hillsboro was in the lowest quartile. As shown in Table 78, these two districts had 498 boys and 508 girls in grades 3, 4, 5, and 6, in 10 schools in Year I.

The two school districts in the replication study are McKinney, located in the Dallas metropolitan area, and Abilene, a metropolitan city, according to the 1960 U.S. Census. McKinney is about 30 miles north of the city of Dallas and might be classified as a small town. McKinney included a segregated Negro school. Abilene did not provide any Negro pupils. For McKinney, the Census Reports indicated that the median adult educational levels for the five schools ranged from 9.0 to 9.3, while median family income

Table 78. Description of the birth order study samples by sex, grade, and school district, Year I[a] of the Texas sample.

School Districts	Number of Schools	MAEL[b]	MFI[c]	Grade:	Boys					Girls					District Total
					3	4	5	6	Total	3	4	5	6	Total	
					Pilot Study										
Breckenridge	5	11.4	$4752		69	64	63	71	267	82	78	53	62	275	542
Hillsboro	5	9.0	$2935		50	57	64	60	231	67	51	51	64	233	464
					Replication Study										
McKinney	5	9.1	$3941		64	70	55	105	294	54	78	65	94	291	585
Abilene	11	11.4	$5309		225	212	143	109	689	233	203	171	112	719	1408
					Combined Study										
Combined	26	9.4	$4226		408	403	325	345	1481	436	410	340	332	1518	2999

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[a] Year II Sample is identical to Year I, except that TR's were not available on 81 pupils, who were dropped from the Year II Sample.

[b] Median Adult Educational Level, source: 1960 U.S. Censuses of Population and Housing.

[c] Median Family Income, source: 1960 U.S. Censuses of Population and Housing.

ranged from $3,670. to $4,408. The respective ranges for the 11 Abilene schools were 8.9 to 13.2 for educational level and $3,435. to $9,250. for family income. As shown in Table 78, these two districts had 983 boys and 1,010 girls in grades 3, 4, 5, and 6 in 16 schools in Year I.

The combined study includes all four schoot districts but it augmented by the inclusion of data for Year II as well as Year I. The 2,999 cases in Year I were reduced to 2,918 in Year II because TR were not available on 81 pupils. The SES level for the combined sample, as indicated in Table 78 (MAEL 9.4, and MFI $4,226.), was below the comparable values for the total Year I Texas sample of 10.2 school years completed and $4,515. annual family income.

Summary of Preliminary Study (Sells and Roff, 1964b)

Background. Murphy, Murphy, and Newcomb (1937), in their pioneering book on experimental social psychology, severely criticized a number of birth-order studies which tended to be inconclusive or contradictory. They concluded that the objective fact of ordinal position in the family contributes little psychological insight into the operation of social factors of family influence without consideration of its meaning to the child, to the siblings, and to the parents. Instead of "sheer comparison of children in terms of birth order," they advocated more dynamic approaches, such as of relations between various facets of parents' attitudes and children's behavior, and supported their position by citing numerous examples of such research which, even today, would be regarded as productive.

Serious interest in the behavioral effects of birth order has nevertheless persisted, and the writers have counted over seventy researches, published since 1950, dealing principally or in part with some aspect of this topic. The principal difference between current formulations and that criticized by Murphy, et al. appears to reflect a change of research models between the 1930's and the 1960's. The bivariate experiment, in which the relations between a dependent and an independent variable were observed while everything else was "held constant," has gradually given way to a multivariate experimental model, which provides more adequately for multiple determination of behavior by recognizing the joint contributions of multiple factors accounting individually for fractional variances.

Many correlates of birth order have been investigated, but few systematic studies of ordinal position have been found. In general, the position of the oldest child has been found to be somewhat vulnerable in relation to factors related to social and emotional adjustment, while the youngest child appears to be more favorably situated from the standpoint of such influences. The only child, contrary to widespread belief, appears to resemble the youngest rather than the oldest in these respects (Hillinger, 1958; Vuyk, 1959). There are, however, compensating influences. For example, Rosen (1961) has shown that oldest children tend to excel in *need achievement*.

The hypothesis tested in the present study is based on the expected relation of ordinal position to the likelihood of receiving solicitous, ego-satisfying attention from parents, older persons, and siblings. It is believed that certain ordinal positions are more conducive than others to receiving such favorable attention, and that individuals who are thus favored are likely to develop a greater potentiality for positive, harmonious peer relations. In this context, it was hypothesized that the youngest and only child positions would tend to have the most favorable peer relations, while the oldest and middle positions, which tend to be most prone to be superseded or "by-passed," and which involve most sibling competition, would be the most vulnerable to peer rejection. Inasmuch as the second child of two is also a youngest child, this position was expected to resemble the youngest and only positions, while the second child in larger families, who is, in effect, a middle child, was expected to resemble more the middle and oldest positions. There are, of course, other factors that interact with birth order in influencing behavior, such as sex of siblings, intervals between siblings, socioeconomic status, and many aspects of parental behavior. Nevertheless, assuming randomization of these in a large sample, it was expected that the hypothesized relations would occur significantly.

Study Design. Birth order data were obtained independently for 1,013 pupils, constituting the complete samples for two Texas school districts, through the cooperation of the respective school counselors, who served as local coordinators for the study. A card was prepared for each pupil, indicating sex and date of birth of every sibling, and birth order of the sample was coded according to the following six categories, used in the analysis reported below:

1. Only child
2. Oldest child
3. Second child of two
4. Second child of more than two
5. Middle child (all positions between second and youngest)
6. Youngest child

The relation of each of the four peer scores to the six birth order categories was examined by analysis of variance, using an adaptation of Winer's factorial design for unweighted means analysis of independent groups with unequal cell frequencies (1962, p. 241). Three main effects, of birth order, grade, and sex, three first-order interactions, of birth order with grade, birth order with sex, and grade with sex, and one triple interaction, of birth, grade, and sex were tested for each of the four peer relations measures.

Results. The analysis of variance results are shown in Tables 79 through 82[2]. Only one main effect is significant for the sociometric ratings. This is the variation in peer acceptance-rejection associated with birth order. The F tests for LM and LD are significant beyond the .01 level, while that for LL falls between the .10 and .05 levels. No significant associations were found involving birth order with grade or sex. The TR scores are not significantly related to birth order or grade, but the variation between means of TR's for sex groups approaches significance (between .10 and .05), with girls rated higher than boys by teachers, most of whom are female.

The rank order of the mean z-scores of birth order groups in the TR data corresponds very closely to that for the peer choices, even though the F test for birth order is non-significant for TR. The overall means of birth order

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[2] A complete summary of the frequencies, means, variances, and marginal weighted means for the LM,LL,LM-LL, and TR scores by sex, grade, and birth order has been deposited as Document number 7759 with the ADI Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington 25, D.C. A copy may be secured by citing the Document number and by remitting $3.75 for photoprints, or $2.00 for 35mm. microfilm. Advance payment is required. Make checks or money orders payable to: Chief, Photoduplication Service, Library of Congress.

Table 79. Analysis of variance for LM peer scores by birth order, sex and grade[a].

Source	df	SS	MS	F[b]
Birth Order (B)	5	22.84	4.57	4.91[c]
Sex (S)	1	.33	.33	.35
Grade (G)	3	1.00	.33	.35
BS	5	3.33	.67	.72
SG	3	1.67	.56	.60
BG	15	16.17	1.08	1.16
BSG	15	17.17	1.14	1.22
Within Cells	965	896.23	.93	
Total	1012			

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

[c] $p<.01$

Table 80. Analysis of variance for ML peer scores by birth order, sex, and grade[a].

Source	df	SS	MS	F[b]
Birth Order (B)	5	9.67	1.93	1.97[c]
Sex (S)	1	.17	.17	.17
Grade (G)	3	1.17	.39	.40
BS	5	2.17	.43	.44
SG	3	.83	.28	.29
BG	15	12.34	.82	.84
BSG	15	14.01	.93	.95
Within Cells	965	941.57	.98	
Total	1012			

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

[c] $p > .10 < .05$

Table 81. Analysis of variance for LD peer scores by birth order, grade and sex[a].

Source	df	SS	MS	F[b]
Birth Order (B)	5	19.68	3.94	4.24[c]
Sex (S)	1	.50	.50	.54
Grade (G)	3	1.17	.39	.42
BS	5	1.17	.23	.25
SG	3	1.67	.56	.60
BG	15	15.01	1.00	1.08
BSG	15	16.84	1.12	1.20
Within Cells	965	900.63	.93	
Total	1012			

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

[c] $p<.01$

Table 82. Analysis of variance for TR peer scores by birth order, sex and grade[a].

Source	df	SS	MS	F[b]
Birth Order (B)	5	4.00	.80	1.25
Sex (S)	1	2.17	2.17	3.39[c]
Grade (G)	3	.83	.28	.44
BS	5	1.33	.27	.42
SG	3	.50	.17	.27
BG	15	8.34	.56	.88
BSG	15	15.51	1.03	1.61
Within Cells	965	621.05	.64	
Total	1012			

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

[c] $p > .10 < .05$

groups, for all four variables, which are ranked identically to the averages of the three peer choice variables, are as follows:

1.	Youngest child	5.19
2.	Only child	5.13
3.	Second of two	5.09
4.	Second of more than two	4.98
5.	Oldest child	4.91
6.	Middle child	4.87

The line between the third and fourth ranks indicates what appears to be a natural division between two clusters on the acceptance-rejection dimension. The "accepted" cluster, with means all above 5.00, includes *youngest, only, and second child of two* (which is a special case of youngest child), while the "rejected" cluster, with means all below 5.00, includes *middle, oldest, and second child of more than two* (which is a special case of middle child). The weighted means of the two clusters for LD, the most stable of the peer choice measures, are 5.17 and 4.89, respectively, and the t test for this difference is significant beyond the .001 level.

Discussion. Although the hypothesis concerning the relation of peer acceptance-rejection to birth order is supported, this study does not clarify the nature of the behavior mechanisms involved. It was hoped that further information concerning these would emerge as the peer relations study progresses. The emergence of the two clusters, located in the positive and negative ranges of the acceptance-rejection continuum, suggests a polarity related to ordinal position that merits further consideration. To demonstrate whether or not this does, in fact, reflect the effects of attention and solicitous consideration on the child, it is necessary to inquire more deeply into the family situation. (In the published paper it was stated that such inquiry was in progress, along with replication of the pilot study,and that further answers to the questions raised here might be forthcoming.)

The fact that birth order was the only significant main effect, and that none of the interactions was significant is interpreted as evidence of the consistency of the birth-order-peer acceptance-rejection relationship for both sexes and over the range of elementary grades included in this study.

Replication Study

The replication study followed the procedure described in the preliminary study and employed the same computer programs for analysis of Year I data, except that separate analyses were made for each of the two school districts, McKinney and Abilene.

Results. The results are presented in Tables 83 through 87. These tables are similar in form to the analysis of variance tables in the pilot study except that the results are shown for each district separately.

For the Abilene sample no significant main effects or interaction effects were found on any of the five measures of peer acceptance-rejection.

The analyses of the McKinney data confirm those in the pilot study. Only one main effect, that of birth order, was significant on LM, LD, TR, and DT but not on LL.

The following tabulation compares the pilot and replication study results, presenting mean scores for the six ordinal positions, averages across LM, LL, LD, and TR, arrayed in rank order.

	Pilot Study	Replication Study	
		McKinney	Abilene
1. Youngest Child	5.19	5.19	5.02
2. Only Child	5.13	4.80	5.05
3. Second of Two	5.09	5.30	5.16
4. Second of More Than Two	4.98	5.08	5.02
5. Oldest Child	4.91	5.13	5.06
6. Middle Child	4.87	4.90	5.00

Discussion. McKinney, the community in which the results support those of the pilot study, resembles Breckenridge and Hillsboro, from which the pilot study sample was drawn, with respect to community size, racial composition, and SES background, while Abilene, the community in which the birth

Table 83. Analysis of variance for LM by birth order, sex, and grade for the two districts in the replication sample, Year I[a].

Source	Abilene df	Abilene SS	Abilene MS	Abilene F[b]	McKinney df	McKinney SS	McKinney MS	McKinney F[b]
Birth Order (B)	5	6.67	1.33	1.35	5	13.97	2.79	3.02**
Sex (S)	1	.73	.73	.74	1	.79	.79	.85
Grade (G)	3	1.27	.42	.43	3	.44	.14	.16
BS	5	10.41	2.08	2.10	5	4.21	.84	.91
SG	3	2.58	.86	.87	3	3.76	1.25	1.35
BG	15	18.00	1.20	1.21	15	12.62	.84	.91
BSG	15	27.78	1.85	1.87	15	21.11	1.40	1.52
Within Cells	1360	1343.17	.98		537	496.67	.92	
Total	1407	1410.65			584	553.61		

**$p<.01$

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 84. Analysis of variance for LL by birth order, sex, and grade for the two districts in the replication sample, Year I[a].

Source	Abilene				McKinney			
	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	2.18	.43	.46	5	7.37	1.47	1.65
Sex (S)	1	.27	.27	.29	1	.45	.45	.51
Grade (G)	3	.14	.04	.05	3	.34	.11	.12
BS	5	7.62	1.52	1.61	5	1.00	.20	.22
SG	3	.48	.16	.17	3	2.52	.84	.94
BG	15	11.50	.76	.81	15	17.64	1.17	1.32
BSG	15	6.19	.41	.43	15	18.90	1.26	1.41
Within cells	1360	1285.87	.94		537	477.94	.89	
Total	1407	1314.28			584	526.21		

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 85. Analysis of variance for LD by birth order, sex, and grade for the two districts in the replication sample, Year I[a]

	Abilene				McKinney			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	4.97	.99	1.02	5	11.73	2.34	2.57*
Sex (S)	1	.20	.20	.21	1	.11	.11	.13
Grade (G)	3	.63	.21	.21	3	.43	.14	.15
BS	5	10.15	2.03	2.09	5	3.23	.64	.71
SG	3	1.86	.62	.64	3	4.14	1.38	1.51
BG	15	18.78	1.25	1.29	15	12.39	.82	.90
BSG	15	19.92	1.32	1.36	15	23.08	1.53	1.69
Within cells	1360	1318.48	.96		537	488.55	.90	
Total	1407	1375.02			584	543.69		

$*p < .05$

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 86. Analysis of variance for TR by birth order, sex, and grade for the two districts in the replication sample, Year I[a].

	Abilene				McKinney			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	1.30	.26	.35	5	16.55	3.31	5.15**
Sex (S)	1	.15	.15	.21	1	1.45	1.45	2.27
Grade (G)	3	1.53	.51	.69	3	1.86	.62	.97
BS	5	5.45	1.09	1.48	5	1.26	.25	.39
SG	3	4.36	1.45	1.97	3	1.27	.42	.66
BG	15	4.56	.30	.41	15	15.83	1.05	1.64
BSG	15	5.79	.38	.52	15	11.76	.78	1.22
Within cells	1360	1001.15	.73		537	344.60	.64	
Total	1407	1024.33			584	394.61		

**$p < .01$

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 87. Analysis of variance for DT by birth order, sex, and grade for the two districts in the replication sample, Year I[a].

	Abilene				McKinney			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	5.06	1.01	1.00	5	19.16	3.83	4.15**
Sex (S)	1	.01	.01	.01	1	.50	.50	.54
Grade (G)	3	1.09	.36	.36	3	.82	.27	.29
BS	5	10.01	2.00	1.98	5	2.73	.54	.59
SG	3	2.56	.85	.84	3	1.85	.61	.66
BG	15	14.69	.97	.97	15	13.59	.90	.98
BSG	15	16.26	1.08	1.07	15	19.64	1.30	1.41
Within cells	1360	1373.03	1.00		537	495.66	.92	
Total	1407	1422.74			584	553.98		

**$p < .01$

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

order results are negative, does not. Whether systematic control of demographic and SES factors would help explain the different results is an unanswered question. However, even in Abilene, the results with respect to categories 3 (second of two), 4 (second of more than two), and 6 (middle child) are in line with the pilot study results, while those for 2 (only child) are inconsistent in both McKinney and Abilene. The results of the replication study may be regarded as furnishing support for the original findings for the critical positions of youngest and middle child.

Combined Study

The combined study followed the procedure described for the pilot and replication studies and employed the same computer programs for analysis of the data, but, as noted above, the four school districts were combined and the data were augmented by including peer status measures for Year II.

Results. The results are presented in Tables 88 through 93. The first five tables are identical in form to Tables 79 through 82 of the pilot study, one for each of the five peer status scores. Table 93 shows the mean peer scores, by year, for each of the six birth-order positions, with t-tests comparing the pooled data for the more favored and less favored positions determined in the pilot study. The analysis of variance tables (88 through 92) examine for the main effects of birth order, sex, and school grade, and

Table 88. Analysis of variance for LM by birth order, sex, and grade for Year I and Year II[a]. Combined sample of four Texas districts.

	Year I				Year II			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	22.74	4.54	4.75**	5	13.04	2.60	2.73*
Sex (S)	1	.04	.04	.04	1	.07	.07	.07
Grade (G)	3	.50	.16	.17	3	2.39	.79	.83
BS	5	7.42	1.48	1.55	5	2.37	.47	.49
SG	3	4.75	1.58	1.65	3	1.53	.51	.53
BG	15	14.84	.98	1.03	15	12.10	.80	.84
BSG	15	28.53	1.90	1.98*	15	14.99	.99	1.04
Within cells	2951	2825.46	.95		2870	2735.22	.95	
Total	2998	2904.29			2917	2781.74		

*p<.05
**p<.01

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 89. Analysis of variance for LL by birth order, sex, and grade for Year I and Year II[a]. Combined sample of four Texas districts.

	Year I				Year II			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	8.32	1.66	1.79	5	7.86	1.57	1.72
Sex (S)	1	.04	.04	.05	1	1.14	1.14	1.25
Grade (G)	3	.42	.14	.15	3	2.08	.69	.76
BS	5	5.50	1.10	1.18	5	1.86	.37	.41
SG	3	.78	.26	.28	3	.50	.16	.18
BG	15	20.04	1.33	1.44	15	10.34	.68	.75
BSG	15	14.54	.96	1.04	15	12.18	.81	.89
Within cells	2951	2732.52	.92		2870	2609.10	.90	
Total	2998	2782.19			2917	2645.08		

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[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 90. Analysis of variance for LD by birth order, sex, and grade for Year I and Year II[a]. Combined sample of four Texas districts.

	Year I				Year II			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	19.19	3.83	4.07**	5	14.32	2.86	3.06**
Sex (S)	1	.05	.05	.06	1	.20	.20	.22
Grade (G)	3	.42	.14	.14	3	2.56	.85	.91
BS	5	7.89	1.57	1.67	5	2.22	.44	.47
SG	3	3.75	1.25	1.32	3	1.33	.44	.47
BG	15	16.46	1.09	1.16	15	9.43	.62	.67
BSG	15	24.68	1.64	1.74*	15	11.74	.78	.83
Within cells	2951	2783.61	.94		2870	2686.75	.93	
Total	2998	2856.09			2917	2728.60		

* $p<.05$
**$p<.01$

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 91. Analysis of variance for TR by birth order, sex, and grade for Year I and Year II[a]. Combined sample of four Texas districts.

	Year I				Year II			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	6.51	1.30	1.88	5	19.47	3.89	5.84**
Sex (S)	1	5.51	5.51	8.00**	1	11.16	11.16	16.77**
Grade (G)	3	.74	.24	.35	3	2.26	.75	1.13
BS	5	6.01	1.20	1.74	5	4.23	.84	1.27
SG	3	.17	.05	.08	3	10.60	3.53	5.30**
BG	15	7.17	.47	.69	15	11.53	.76	1.15
BSG	15	11.66	.77	1.12	15	5.79	.38	.58
Within cells	2951	2034.64	.68		2870	1911.03	.66	
Total	2998	2072.46			2917	1976.11		

$**p<.01$

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 92. Analysis of variance for DT by birth order, sex, and grade for Year I and Year II[a]. Combined sample of four Texas districts.

	Year I				Year II			
Source	df	SS	MS	F[b]	df	SS	MS	F[b]
Birth Order (B)	5	20.91	4.18	4.26**	5	19.04	3.80	3.82**
Sex (S)	1	1.24	1.24	1.26	1	2.71	2.71	2.73
Grade (G)	3	.44	.14	.15	3	4.71	1.57	1.57
BS	5	9.56	1.91	1.95	5	4.41	.88	.88
SG	3	1.85	.61	.63	3	4.14	1.38	1.38
BG	15	12.32	.82	.83	15	10.34	.68	.69
BSG	15	20.76	1.38	1.41	15	10.45	.69	.70
Within cells	2951	2894.12	.98		2870	2856.27	.99	
Total	2998	2961.25			2917	2912.10		

**p<.01

[a] An unweighted-means analysis of variance (Winer, 1962)

[b] All effects' mean squares are evaluated with the within cells variance under a fixed effects model.

Table 93. Comparison of mean peer scores by birth order for Year I and Year II. Combined sample of four Texas school districts.

Birth Order Position		Year I						Year II				
		Mean Peer Scores						Mean Peer Scores				
	N	LM	LL	LD	TR	DT	N	LM	LL	LD	TR	DT
1. Youngest Child	389	5.17	5.06	5.14	5.09	5.14	392	5.08	5.05	5.08	5.05	5.07
2. Only Child	316	5.06	5.06	5.08	5.00	5.05	308	5.01	5.00	5.00	5.01	4.99
3. Second of Two	451	5.18	5.10	5.17	5.08	5.15	438	5.18	5.09	5.15	5.14	5.15
4. Second of more than Two	552	5.04	5.00	5.01	5.01	4.99	521	5.04	5.03	5.04	5.08	5.05
5. Oldest Child	862	5.05	4.99	5.02	5.04	5.03	816	5.06	5.04	5.06	5.10	5.07
6. Middle Child	429	4.89	4.92	4.90	4.95	4.88	443	4.91	4.90	4.89	4.87	4.86
More Favored Positions (1,2,3)	1156	5.14	5.08	5.13	5.06	5.12	1138	5.10	5.05	5.08	5.07	5.08
Less Favored Positions (4,5,6)	1843	5.01	4.98	4.99	5.01	4.98	1780	5.02	5.00	5.01	5.03	5.01
Variance (pooled)		.96	.93	.95	.69	.98		.95	.91	.93	.68	1.00
Difference (more-less favored)		.13	.10	.14	.05	.14		.08	.05	.07	.04	.07
t		3.16**	2.77**	3.88**	1.58	3.74**		2.22*	1.39	1.94*	1.26	1.87*

* $p<.05$
**$p<.01$

for three primary interactions among the main effect variables, as well as the second-order interaction among the three.

For LM only one main effect, birth order, is significant, in both years as in the pilot study, while the second-order interaction is marginally significant for Year I and second in rank, though not significant in Year II. For LL, birth order approaches significance in both years and has the highest F ratio, as in the pilot study. The joint effects of LM and LL, relfected in LD, produce a highly significant F ratio for birth order in Table 90, which also shows a significant second-order interaction in Year I only. As in the pilot study, the most significant effect for TR in both years is on sex, reflecting the general tendency of teachers to rate girls more favorably than boys. However, the birth order effect for TR is significant in Year II and marginal in Year I, showing a relationship in the larger sample that was not significant in the pilot study. In addition, the interaction of sex and grade shows a significant F ratio for Year II. This corresponds well with the analysis reported in an earlier section, in which differential changes related to sex and grade were mentioned. Finally, Table 86 shows a highly significant birth order effect for DT in both years. Since DT summarizes information in both the Peer and Teacher Ratings, this result may be accepted as the most definitive confirmation of the relation of birth order to peer acceptance-rejection in the study.

The nature of this relationship is illuminated in Table 93, which serves also as a test of the hypothesis developed in the pilot study as to the identification of the presumed most favored and least favored ordinal positions, from the standpoint of peer status. Table 93 summarizes the means of each of the five peer scores for each of the six birth order positions in each year. It also presents pooled means for the three favorable positions identified in the pilot study (youngest, only, and second child of sets of two) and for the three unfavorable positions (second of more than two, oldest, and middle child) and t-tests of the differences between these for each peer score in each year. The latter comparisons are significant at the .01 level for Year I and at the .05 level for Year II on all measures except TR. The TR means fall in the expected direction, but the differences are very small.

Examination of the mean scores by variable by birth order position permits two conclusions. First, the combined study upholds the overall validity of the pilot study results, particularly with respect to the middle and youngest ordinal positions. And second, the initial results with regard to only child are not supported. The evidence for these conclusions is summarized in the following tabulation which compares the pilot and combined study results, presenting mean scores for the six ordinal positions, averaged across LM, LL, LD, and TR, arrayed in rank order as found in the pilot study.

			Combined Study	
		Pilot Study	Year I	Year II
1.	Youngest Child	5.19	5.12	5.07
2.	Only Child	5.13	5.05	5.01
3.	Second of Two	5.09	5.13	5.14
4.	Second of More than Two	4.98	5.02	5.05
5.	Oldest Child	4.91	5.03	5.07
6.	Middle Child	4.87	4.92	4.89

Discussion. The birth order results that emerge as most striking in this study are those related to categories 3 (second of two) and 6 (middle). Since two-sets of children are the most common family size, and since the second of two is a youngest child, the consistent results indicating the favorable effects of this position on peer relations are noteworthy. Similarly, the consistent results showing the unfavorable effects of the middle child position on the peer relations of the 429 subjects in this category tend to reinforce the hypothesis offered in the interpretation of the pilot study results with respect to alteration of family structure and accompanying perceptions of parental rejection. Apparently the middle child position is more traumatic than that of the oldest child, who is given responsibility and may receive rewards for successful role performance, despite the perceived loss of love experienced with the introduction of younger siblings into the family.

Despite the significance of these results, it must be noted that the effects of birth order on peer acceptance-rejection are minor in terms of magnitude of relationship. In terms of our interpretation they are also indirect and mediated by interactions among parents and children as a result of structural reorganizations of families requiring changes in role relations.

FAMILY BACKGROUND STUDIES

The search for correlates of peer acceptance-rejection produced information that repeatedly pointed to the family as the mediator of various influences that appeared to structure the nature of a child's peer relations. Several attempts were made early in this Study to codify family influence, using a variety of methodologies, including open-end questionnaires sent to schools, tape-recorded interviews with classroom teachers, and structured questionnaires sent to classroom teachers through school coordinators. Later, a more extensive study of family background in depth, involved home visits and extensive data collection from parents. This section reports three exploratory studies, using teachers and other school personnel as sources. The richness of the information obtained encouraged the investigators to pursue the more ambitious study reported in Chapter VI.

AN OPEN-END QUESTIONNAIRE EXPLORING FAMILY SOCIAL PATHOLOGY

Purpose

The aim of this exploratory study was to search for significant areas of family adjustment that discriminated between acceptance and rejection by peers. After preliminary negotiations, an open-end questionnaire inquiring concerning nine general areas of family adjustment was mailed to school coordinators in seven Texas school districts in 1963. This questionnaire requested information concerning individual pupils in a sample of 685, selected to provide a wide range of peer relations status. The replies were coded and tabulated in relation to peer scores.

Subjects

Initially it was intended to include an equal number of high (beyond +1 standard deviation from the mean), middle (between +1 and -1 standard deviation from the mean), and low (beyond -1 standard deviation from the mean) children on the basis of LD scores. However, since peer scores were available for two years, cases were added from each district which were high in one of the years and low in the other. Using the DT average peer score for two years and splitting at the mean of 5. (to distinguish "high" and "low" children), there were 326 boys (96 high and 230 low) and 359 girls (117 high and 242 low) in the sample of 685 pupils.

Table 94 shows the composition of the sample in terms of peer relations status, as defined above, socioeconomic level, sex, race, and size of community where they attended school. SES level was determined by ordering the 82 schools participating in Year I on the basis of median number of years of education completed by adults over 25 for the appropriate census units in the 1960 Census. The schools were divided in thirds, and each pupil was classified as high, middle, or low in SES according to the position of his school. Most of the sample came from school districts in large metropolitan communities, such as Fort Worth (Castleberry, Everman), Dallas (McKinney), Abilene, and Waco. A minority came from the smaller communities of Bonham and Breckenridge.

Comparison with Census Data. While not directly comparable, using assumptions outlined below several items in this study can be related to statistics in the 1960 census reports. Three pairs of conceptually related statistics are shown in Table 95:

1. Per cent of Children Living with Both Parents. The census data report on numbers of children under 18 years of age living with both parents. The children in the present sample were estimated to be under 14 years of age, and an approximation of this statistic was estimated for each SES category by subtracting the per cent with disrupted parental

Table 94. Breakdown of sample by peer relations status, SES, sex, race, and size of community

		Socioeconomic Status					
		High		Middle		Low	
Peer Relations Status		H	L	H	L	H	L
Race and Sex	Community Size						
White Boys	Large	22	49	22	59	24	54
	Small	0	0	11	25	15	20
	Total	22	49	33	84	39	74
White Girls	Large	18	39	24	73	40	65
	Small	0	0	14	22	12	28
	Total	18	39	38	95	52	93
Negro Boys	Large	0	0	0	0	2	21
	Small	0	0	0	2	0	0
	Total	0	0	0	2	2	21
Negro Girls	Large	0	0	0	0	9	15
	Small	0	0	0	0	0	0
	Total	0	0	0	0	9	15
Total		40	88	71	181	102	203

Table 95. Comparison of Census population indices with study sample indices by community size and socioeconomic status.

	Number of Schools in Sample	Median Per cent Children Living with Both Parents		Median Per cent Income <$1000	Median Per cent Receiving Welfare	Median Per cent Adults <5 yrs. School	Median Per cent Low Education of Parents
		Census Population (range)	Sample	Census Population (range)	Sample	Census Population (range)	Sample
WHITE							
Metropolitan							
High SES	5	94 (94 to 99)	94	1.7 (0.0 to 2.1)	0	0.2 (0.0 to 0.2)	1.6
Middle SES	9	93 (87 to 96)	91	1.7 (1.1 to 3.0)	2.8	0.2 (0.0 to 0.7)	1.1
Low SES	9	83 (71 to 86)	87	4.8 (0.5 to 9.3)	4.9	1.3 (1.0 to 2.2)	1.1
Small Town							
Middle SES	3	87 (87 to 87)	78	4.9 (4.9 to 4.9)	22.2	0.5 (0.5 to 0.5)	13.9
Low SES	2	67 (67 to 67)	76	6.5 (6.5 to 6.5)	12.0	1.4 (1.4 to 1.4)	14.7
NEGRO							
Metropolitan							
Low SES	1*	65	51	9.9	10.2	2.2	2.0
		rho = .94, p<.01		rho = .81, p<.06		rho = .39, ns	

*Two Negro schools, located in Small Towns, were excluded from the population statistics only.

marital relations from 100. The rank order correlation between the sample and the Census totals, of .94, was significant beyond the .01 level, indicating that the sample is comparable with the general population on this statistic.

2. Welfare. The per cent of the population with earnings of less than $1,000. per year income in the census population was compared with the per cent receiving welfare in the present sample. Except for the schools located in small towns these statistics were comparable. The relatively high proportion of comments from schools located in small towns suggests that the number of families on welfare may be over-represented in the study sample. The rank order correlation between sample and population indices approaches significance.

3. Parents Education. The census statistic for the per cent of the adult population with less than 5 years of schooling was selected as a standard. The per cent in the population was compared with the per cent of the sample for which comments were received concerning low educational level of parents. Again, the two statistics agree reasonably well, except for the small towns.

The data in Table 95 suggest that the sample was representative for Negroes and for Whites residing in metropolitan areas, but that the adverse comments obtained from small towns were over-represented for Education of Parents, as well as for Welfare.

Procedure.

Arrangements were made with the school coordinators in the seven school districts to obtain the family background information. The coordinators were furnished individual forms for the children in their respective samples and requested to check records, files, and all available local resources to determine the information requested. The peer status of the children in this sample was not indicated on the forms. The inquiry focused on whether or not each child's family had a positive indication on any of the following items:

(1) Psychiatric history for any member.

(2) Welfare history; that is, known to any welfare agency.

(3) Criminal or deviant behavioral history.

(4) Significant medical history, including physical handicap, blindness, etc.

(5) Social history; that is, divorce, separation, or other major disruptive change in the child's parental family.

(6) Excessive family mobility.

(7) Unusual or atypical occupational history; e.g. unemployment, marginal worker, father travels, overseas, etc.

(8) Exceptional educational background, e.g. illiterate, bilingual, etc.

(9) Any change in school status from 1962 to 1963 (other than promotion).

The school coordinators were requested to include only information that could be obtained through reliable sources or which could be verified. Followup interviews with the school coordinators subsequently gave the impression that they generally had made full and conscientious use of sources available to provide the information sought in this inquiry.

The comments obtained in this manner were grouped into categories. The major categories were retained, but several subcategories were developed, and each comment was classified with respect to the family member principally involved (father, mother, sibling, or subject). A brief description illustrating typical comments classified under each of the major categories is presented in Table 96.

Results

A total of 732 comments was received for the 685 children in the sample. In analyzing them, it was assumed that (1) the teachers were reasonably good judges of children's peer relations; (2) the teachers knew that they were participating in an investigation of peer acceptance-rejection in children; (3) the teachers' values and hypotheses concerning peer relations might influence their comments; and (4) teacher comments would probably reflect a bias in favor of a larger number of adverse comments for children with low peer relations, although the children's scores were not included on the comment sheets. With full appreciation of the possibilities of bias mentioned, the comments were nevertheless considered factual and verifiable and worthy of cautious analysis.

Table 96. Family Background Study I: Examples of comments received, by major category.

1. Psychiatric history for any member of the family.

Whole family emotionally disturbed - possibly from the mother's instability.

There is evidence of psychiatric problem - father not well balanced - father ran away, has been in mental institute.

Feeble mindedness is evident in father.

This pupil has mental troubles. The whole family is odd.

There is evidence of peculiar activity in mother's case.

Mother had a nervous breakdown last year.

Father has received psychiatric treatment - seems to have recovered.

Mother has been hospitalized.

2. Welfare history.

This is a broken home - I understand the father left them some time ago. The mother and children are on welfare.

This child, a twin, has received help from the welfare agency. She has a speech defect and needs special help. Her parents are divorced and her step father is unemployed.

The father is an invalid - the mother works part-time.

This is a relief family - school free lunch.

Family on relief since she was born.

This family has the record for longest term of relief in the county.

Table 96 (Continued)

3. Criminal or behavioral history

Some criminal history in father's past.

Father has been in penitentiary for theft.

Father has been in jail - mother and father separated at present.

Mother has been arrested.

Peculiar behavior activities notes in the mother - she lives with one man awhile, then with another awhile.

Father arrested on more than one occasion. Behavior is not good.

4. Significant medical history.

Father injured, got deeply in debt, not able to support his large family.

Pupil has weak eyes - welfare agency purchased glasses for him.

Father physically ill - veteran's aid. Illness of mother prevents employment.

Father had injury two years ago - worked little since.

Physical handicap - poor speech - poor vision.

Father ill. Has been in and out of hospital. The pupil takes care of his father - often misses 2 or 3 days of school in succession waiting on father.

There has been separation in the family. Pupil lives with grandparents and has almost total responsibility of taking care of ill grandparents.

5. Social history, that is divorce, separation, or other major disruptive changes in the child's parental family.

Mother has not divorced all husbands, but has had 4 or 5. This is a real social problem. Two children and mother - 3 different names.

Table 96 (Continued)

Parents have been separated and now living together. Mother married 5 times - drinks heavily.

Father and mother separated. Mother left home and now lives in California. Child lives with her father.

Father deceased. On welfare - free lunch at school.

Separation in family - mother has lived with 2 or 3 different men.

There are three groups in this family - different names - different fathers - mother does not live with any of these fathers - child born out of wedlock.

6. Excessive family mobility.

This family has moved a lot because the father is in the Air Force. Ronnie was in school - France.

(Father in Air Force is frequently indicated under this item.)

Changes home address often and changes schools within the city.

Child has been in three schools in city since 9-1-61.

The family moves often - 3 times the past 3 years.

The family moves to western Texas then back to Texas about once a year.

The family moved 3 times the past year.

The father drives a truck - mother goes with him a lot - child stays with grandmother. The family moved from Breckenridge the past month.

7. Unusual or atypical occupational history.

Father overseas.

Father is in the Air Force

Father unemployed most of the time.

Table 96 (Continued)

Father has no regular employment - he works irregularly in oil fields.

Father unemployed for periods - little income.

Father is marginal worker - unemployed for long periods - practically no income.

Low income - mother works and irons - tries to support four children.

8. Exceptional educational backgrounds, e.g. illiterate, bilingual, etc.

Bilingual family.

Father and mother both almost illiterate.

Mother is illiterate.

Bilingual - poor mentality - poor attendance.

This family and this child are both misfits - non-conformists.

Mother is morally good, but the whole family is illiterate.

9. Any change in school status (1962-1963) except promotion.

Retained in grade 7.

Retained in grade 7 - failed grade 5 also.

Pupil retained in 5th. grade.

Was retained in grade 3 - not able to keep up with group now, possibly should be retained this year, but age prevents.

Pupil has been retained in earlier years, but has dropped out of school this last 2 months.

Very slow with school work - will be placed with an "opportunity group" another year.

Child was in Special Education in homebound unit from August 1962 to January 1963.

Demographic Factors and the Frequency of Comments. Table 97 shows the absolute and relative frequency of comments in each category by race, size of community, and SES level. Since there are large differences in frequencies of comments among cells in this table, comparisons are difficult and Table 98 was prepared to facilitate interpretation of these data. The index scores, or adjusted relative frequencies, reported in Table 98 were obtained by the formula:

$$\text{Adjusted Frequency of Comments} = \frac{\text{Per cent of Comments by Category}}{\text{Per cent of Children in the Subsample}}$$

Examination of the data in Table 98 suggested that comments concerning serious illness in the family came from White schools located in small towns and from Negro schools. Comments concerning illness of the child appeared to be associated with middle SES background in both large and small communities. The psychiatric category was commented on most frequently by teachers in the small town, middle SES schools, but the Negro and high SES indices were above the average value.

The Relation of Adverse Family Background Comments and Peer Status. The relative frequencies of adverse comments in the several family background categories were examined in relation to SES and peer scores. The results, reported

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The Relation of Adverse Family Background Comments and Peer Status. The relative frequencies of adverse comments in the several family background categories were examined in relation to SES and peer scores. The results, reported

Table 97. Summary of absolute and relative frequency of comments by SES background in metropolitan areas and small towns for White and Negro children.

Race:	White					Negro	Total
Community Size:	Metropolitan			Small Town		Metropolitan and Small	Metropolitan and Small
SES:	High f (Pct)	Middle f (Pct)	Low f (Pct)	Middle f (Pct)	Low f (Pct)	Low f (Pct)	f (Pct)
Comment Category							
Psychiatric	6(25)	3(12)	3(12)	7(29)	2(8)	3(12)	24(100)
Welfare	0(0)	5(11)	9(20)	16(36)	9(20)	5(11)	44(100)
Criminal History							
Parent		1(10)	3(30)	4(40)	2(20)		10(100)
Child		2(20)	2(20)	3(30)	3(30)		10(100)
Medical History							
Family	4(9)	11(25)	3(7)	7(16)	6(14)	13(30)	44(100)
Child	11(11)	32(31)	27(26)	16(16)	10(10)	6(6)	102(100)
Social History	8(8)	16(15)	24(23)	16(15)	18(17)	24(23)	106(100)
Family Mobility	5(11)	10(23)	15(34)	9(20)	2(5)	3(7)	44(100)
Educational History							
Parents	2(7)	2(7)	2(7)	10(36)	11(39)	1(4)	28(100)
Child	6(12)	15(29)	6(12)	17(33)	4(8)	3(6)	51(100)
Occupational History							
Employment (Except Mil.)	2(4)	3(6)	10(19)	24(46)	10(19)	3(6)	52(100)
Father in Military Serv.	8(19)	30(70)	1(2)	0(0)	1(2)	3(7)	43(100)
Number of Pupils	128(19)	178(26)	183(27)	72(11)	75(11)	49(7)	685

Table 98. The relative frequency of comments adjusted[1] for the proportion of children in the subsample category by SES and community size.

- Race:	White					Negro	Total
Community Size:	Metropolitan			Small Town		Metropolitan and Small	Metropolitan and Small
SES:	High	Middle	Low	Middle	Low	Low	
Comment Category							
Psychiatric	1.34	.48	.47	2.78	.76	1.75	1.00
Welfare	.00	.44	.77	3.46	1.87	1.59	1.00
Criminal History							
Parents	.00	.38	1.11	3.64	1.82	.00	1.00
Child	.00	.77	.74	2.72	2.72	.00	1.00
Medical History							
Family	.49	.96	.25	1.51	1.24	4.13	1.00
Child	.58	1.21	.99	1.49	.89	.82	1.00
Social History	.41	.58	.85	1.44	1.55	3.17	1.00
Family Mobility	.58	.88	1.26	1.82	.45	1.00	1.00
Educational History							
Parents	.38	.27	.27	3.40	3.59	.50	1.00
Child	.63	1.13	.44	3.17	.72	.82	1.00
Occupational History							
Employment (Except Mil.)	.21	.22	.72	4.39	1.76	.81	1.00
Father in Military Serv.	1.00	2.68	.09	.00	.21	.98	1.00

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[1] Adjusted frequency of Comments = $\frac{\text{Per cent of Comments by Category}}{\text{Per cent of Children in the Subsample}}$

in Table 99 show a consistent trend for adverse comments to be associated with low peer status. These are discussed in the following paragraphs.

Psychiatric. This category was associated with peer status within high and middle, but not low, SES levels.

Welfare History. Comments on this item did not appear at the high SES level, but were related to peer status at the middle and low SES levels.

Criminal History. This category was associated with low peer status in the middle and low SES levels.

Medical History. Serious illness in the family was most highly related to low peer status in the low SES groups. Adverse comments relating to health of the child were most frequent in the middle SES level. However, they tended to be more highly associated with peer status within the high and low SES groups.

Social History. As noted above, this category was related to SES. In Table 99 disrupted parental relations occur almost twice as often for low than for high peer status groups in the middle SES level, and nearly three times as often for low peer status groups in the low SES level. At the high SES level, the percentage difference between high and low peer status children is only slight.

Family Mobility. Comments on this category, like those pertaining to Welfare and Educational History, were highly associated with peer status.

Table 99. Summary of percentages of adverse family history by major category, distributed by socioeconomic levels in metropolitan and rural areas and by race. Year II DT scores.

Race:	White										Negro		Total					
Community Size:	Metropolitan						Small Town				Met. and Small							
SES:	High		Middle		Low		Middle		Low		Low		High		Middle		Low	
DT Classification	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Comment Category																		
Psychiatric	0	7	2	2	2	2	0	15	2	4	18	3	0	7	1	5	3	2
Welfare	0	0	2	3	0	8	0	34	4	17	0	13	0	0	1	11	1	11
Criminal History																		
Parents	0	0	0	1	0	3	0	4	0	2	0	0	0	0	0	5	0	5
Child	0	0	0	2	0	2	0	3	0	3	0	0	0	0	0	5	0	5
Medical History																		
Family	2	3	4	7	2	2	4	13	0	13	9	32	2	3	4	8	2	10
Child	5	10	13	20	9	18	20	23	7	17	9	13	5	10	15	21	9	17
Social History	5	7	8	9	5	18	8	30	19	27	27	55	5	7	8	15	11	27
Family Mobility	0	6	2	7	0	13	0	19	4	2	0	8	0	6	1	10	1	9
Educational History																		
Parents	0	2	0	2	0	2	0	21	0	23	0	3	0	2	0	7	0	7
Child	0	7	2	11	0	5	0	36	0	8	0	8	0	7	1	17	0	6
Occupational History																		
Employment (Except Mil.)	5	0	0	2	0	8	8	47	11	15	0	8	5	0	3	14	3	10
Father in Military Serv.	0	9	6	20	0	1	0	0	0	2	18	3	0	9	4	15	2	1
Number of Pupils	40	88	46	132	64	119	25	47	27	48	11	38	40	88	71	179	102	205

Educational History. The relationship between adverse comments concerning parents' education and peer status of the child was consistent across SES levels in that no adverse comments of this type were made on children with above average peer scores. A similar pattern was prevalent for comments concerning the child's educational problems.

Occupational History. Most frequently, comments concerning the father's employment history came from schools in small communities; the association with peer status was consistent at the middle and low SES levels, but not for the high SES group. In this study, most of the families with the father in military service were in the middle and high SES categories. Theoretically, two factors may contribute to the relatively low peer status of children in this situation. These are: (1) the periodic absence of fathers from home and (2) the discrepancy between the social status of the family and the SES level of the school that the child attends.

Peer Scores and the Frequency of Comments. Frequency distributions and cumulative percentages of adverse family history comments in relation to average DT scores for Years I and II are presented in Table 100. The subcategories of comments are described in detail. In this table, a single family may be represented more than once in a single major category.

Table 100. Frequency distribution and cumulative percentages of adverse family history comments. Year I and Year II DT scores.

	DT Score Categories							
	2.0 2.9	3.0 3.9	4.0 4.9	5.0 5.9	6.0 6.9	7.0 7.9	Total	Median
Distribution in Sample:	76	165	262	27	151	4	685	4.4
Category of Family History Comment								
MEDICAL HISTORY								
Family Member Involved								
General Medical								
Father	5	6	2	0	0	0	13	
Mother	0	0	5	1	0	0	6	
Sibling	1	0	3	0	0	0	4	
Child	16	40	43	2	16	0	117	
Sub-total	22	46	53	3	16	0	140	
Cum. per cent	16	49	86	89	100			4.0
PSYCHIATRIC HISTORY								
Father	6	0	2	0	0	0	8	
Mother	2	2	3	0	0	0	7	
Sibling	2	1	3	0	0	0	6	
Child	1	2	0	0	0	0	3	
Sub-total	11	5	8	0	0	0	24	
Cum. per cent	46	67	100					3.1
Alcoholism								
Father	1	1	4	1	0	0	7	
Mother	0	1	1	0	0	0	2	
Sub-total	1	2	5	1	0	0	9	
Cum. per cent	11	33	89	100				4.3
Totals								
Father	12	7	8	1	0	0	28	
Mother	2	3	9	1	0	0	15	
Sibling	3	1	6	0	0	0	10	
Child	17	42	43	2	16	0	120	
Totals	34	53	66	4	16	0	173	
Cum. per cent	20	50	88	91	100			3.9

Table 100 (Continued)

	DT Score Categories							
	2.0 2.9	3.0 3.9	4.0 4.9	5.0 5.9	6.0 6.9	7.0 7.9	Total	Median
Distribution in Sample:	76	165	262	27	151	4	685	4.4
WELFARE HISTORY								
Child Receives Charity through School (Lunches, Milk, Medical, Clothes)	9	9	6				24	
Family has History of Welfare Aid	8	16	8				32	
Total Comments, Welfare History	17	25	14				56	
Cum. per cent	30	75	100					3.5
DEVIANT BEHAVIORAL HISTORY								
Parent								
Serious Offense	2	0	1				3	
Minor Offense	3	3	1				7	
Child Delinquent								
Stealing	2	5					7	
Other	2	0	1				3	
Total, History of Deviency	9	8	3				20	
Cum. per cent	45	85	100					3.0
SOCIAL HISTORY								
Death of Family Member	5	5	11	1	3	0	25	
Cum. per cent	20	40	84	88	100			4.2
Parents Separated, Not Divorced	11	12	11	0	4	0	38	
Cum. per cent	29	60	89	89	100			3.7
Parental Divorces								
Neither Spouse Remarried	2	2	4	0	4	0	12	
Mother only Remarried	5	7	8	1	2	0	23	
Father only Remarried	0	2	2	0	0	0	4	
Both Parents Remarried	0	2	0	0	0	0	2	
Sub-total, Divorced Parents	7	13	14	1	6	0	41	
Cum. per cent	17	49	83	85	100			4.0

Table 100 (Continued)

	DT Score Categories							
	2.0	3.0	4.0	5.0	6.0	7.0		
	2.9	3.9	4.9	5.9	6.9	7.9	Total	Median
Distribution in Sample:	76	165	262	27	151	4	685	4.4
SOCIAL HISTORY (CONT.)								
Disrupted Parental Relations (Death, separation, divorce)	23	30	36	2	13	0	104	
Cum. per cent	22	51	85	87	100			3.9
Parents with 3 or more marriages	4	0	2	0	0	0	6	
Cum. per cent	67	67	100					2.6
No Adult Male in the Home	3	3	2	0	1	0	9	
Cum. per cent	33	67	89	89	100			3.1
Child Caretaker other than Parent	10	6	10	0	2	0	28	
Cum. per cent	36	57	93	93	100			3.6
Children in the Home other than natural siblings:								
Half-siblings	0	0	0	1	2	0	3	
Step-siblings	0	0	1	1	0	0	2	
Adopted siblings	3	1	3	0	1	0	8	
Combinations of above	4	3	6	0	0	0	13	
Sub-total, other than natural siblings	7	4	10	2	3	0	26	
Cum. per cent	27	42	81	89	100			4.2
Child not born into Family								
Born out of Wedlock	1	1	0	0	2	0	4	
Adopted	4	1	4	0	1	0	10	
Sub-total	5	2	4	0	3	0	14	
Cum. per cent	36	50	79	79	100			4.0
FAMILY MOBILITY								
Child Transferred Among Schools	3	7	1				11	
Family Moves Often	7	13	16				36	

Table 100 (Continued)

	DT Score Categories							
	2.0 2.9	3.0 3.9	4.0 4.9	5.0 5.9	6.0 6.9	7.0 7.9	Total	Median
Distribution in Sample:	76	165	262	27	151	4	685	4.4
FAMILY MOBILITY (CONT.)								
Total Comments, Family Mobility	10	20	17				47	
Cum. per cent	21	64	100					3.6
EDUCATIONAL HISTORY								
Of the Child:								
Retained one or more grades	8	14	11	1	1		35	
Social Promotion of Child	3	4	6				13	
Child Unable to Demonstrate Ability to Achieve	3	3	2				8	
Other Educational Problems (Vision,deaf)	1	3	1				5	
Sub-total, Educational Difficulties	15	24	20	1	1		61	
Cum. per cent	25	64	97	98	100			3.6
Absenteeism from School	2	6	13				21	
Cum. per cent	10	38	100					4.3
Of the Parents:								
Illiterate	2	5	12				19	
Less than High School Education	2	2	5				9	
Sub-total	4	7	17				28	
Cum. per cent	15	41	100					4.1
Bilingual Home	4	9	13	2			28	
Cum. per cent	14	46	93	100				4.1
Total Comments, Educational History	25	46	63	3	1		138	
Cum. per cent	18	52	97	99	100			3.9

Table 100 (Continued)

	DT Score Categories							
	2.0	3.0	4.0	5.0	6.0	7.0		
	2.9	3.9	4.9	5.9	6.9	7.9	Total	Median
OCCUPATIONAL OR WORK HISTORY								
Itinerant Worker			1				1	
Father frequently unemployed	4	10	11	1	1		27	
Father presently unemployed	1	1	1				3	
Father is marginal worker	3	3	9			1	16	
Mother supports family	1	3	6	5	2		17	
Mother takes in laundry, etc.	1	1	1				3	
Sub-total	10	18	29	6	3	1	67	
Cum. per cent	15	42	85	94	99	100		4.1
Father in Military Service	13	13	14	0	4		44	
Cum. per cent	30	59	91	91	100			3.8
TOTAL ADVERSE COMMENTS:	170	228	270	17	46	1	732	
Cum. per cent	23	54	91	94	99.9	100		3.9
Adverse Comment per Child	2.2	1.4	1.0	0.6	0.3	0.2	1.1	

The median DT scores were computed for the study sample (N = 685) and for children receiving particular comments. The total group median of 4.4 is below the defined mean of 5.0 for the population. The median DT score was computed for children receiving comments for each of 18 different categories. In every instance the median value of the DT score was below the median value for the total sample.

The order of presentation of the comments was altered slightly in order to compare the total comments related to Medical History and Psychiatric History, including Alcoholism.

The number of adverse comments for children at each class interval of DT score is reported at the bottom of Table 100. The number of comments per child is perfectly correlated (rho=-1.00, p<.01) with the DT score.

Table 101 summarizes the data in Table 100. It is adjusted to reflect the presence or absence of a comment within each major category, in order to satisfy the assumptions of independence for a Chi-square test. The DT scores were grouped into Low (2.0 to 3.9), Middle (4.0 to 5.9), and High (6.0 and above) peer status groups. Chi-squares were computed for 3 x 2 tables using the three levels of peer scores (DT, average for 2 years) and presence or absence of the category comment. The category Criminal Behavior was omitted because its frequency was too low to compute Chi-square. Except for the Father's Employment History, the

Table 101. Summary of adverse family history comments by major category and average DT scores.

Peer Status Group	Low <4.0	Middle 4.0 to 5.9	High ≥6.0	Total	Chi Square (df = 2)
Number in Sample	241	289	155	685	
Major Category	f(Pct)	f(Pct)	f(Pct)	f(Pct)	
General Medical	64(27)	55(19)	16(10)	135(20)	15.8, p<.001
Psychiatric (Incl. Alcoholic)	16(7)	14(5)	0(0)	30(4)	10.3, p<.01
Welfare	30(12)	14(5)	0(0)	44(6)	26.3, p<.001
Disrupted Parental Relations	48(20)	38(13)	13(8)	99(14)	10.9, p<.01
Family Mobility	27(11)	17(6)	0(0)	44(6)	19.8, p<.001
Educational History					
Child	31(13)	19(7)	1(1)	51(7)	21.1, p<.001
Parent	11(5)	17(6)	0(0)	28(4)	9.1, p<.02
Occupational History					
Employment (except Military Service)	21(9)	25(9)	6(4)	52(8)	3.4, p<.20
Father in Military	26(11)	14(5)	4(3)	44(6)	13.9, p<.01

distribution of comments in all categories was significantly associated with peer acceptance-rejection.

Summary. An open-end questionnaire concerning nine general areas of family adjustment for a sample of 685 pupils in seven Texas school districts identified areas of family adjustment that discriminated between acceptance and rejection by peers. The data strongly suggest that factors associated with poor adjustment in the family, or which limit the opportunity to acquire enlightened parental attitudes and practices, are related to peer rejection.

Followup Study of Family Pathology Using a Structured Questionnaire

The results of the preceding study were used as the basis for construction of a questionnaire that could be used in structured interviews with informants concerning family background factors in the lives of school children. Instead of the open-end inquiry, which had decided advantages for exploratory reconnaissance, but was vulnerable to bias among informants, the structured questionnaire required a definite affirmative or negative reply to every item. The increased precision implied also required skillful interviewing techniques. In this followup study, professional persons, principally school counselors, were employed as interviewers. A copy of the questionnaire is appended to this section.

Subjects. The sample obtained included 59 families involving 34 high peer status children and 25 low peer status children, based on average DT score for the first two years. These families were from the Breckenridge, Waco, and McKinney School Districts. A detailed breakdown of the sample is shown in Table 102. A larger sample had been planned, but the interviews proved to be very time-consuming, particularly when it was necessary to consult five or six sources for each child, and the compensation offered, within the constraints of a limited budget, was unattractive. Despite these problems, the results obtained are quite impressive, and all indications support the value of this approach in further research.

Procedure. One of the advantages of conducting personnel research in small communities is that individual life histories are better known to the professional school staff than they are in large cities. As long as such investigations are confined to appropriate professional persons, provisions for anonymity of children and protection of individual privacy are highly feasible.

The interviewers employed for this study were Mr. L. B. Herring, School Counselor in the Breckenridge public schools, Mr. J. R. W. Harper, Liaison Visiting Teacher, Waco public schools, and Mr. Scott Haynes, Elementary Teacher, McKinney public schools. They obtained the information for various parts of the questionnaire from teachers, clergymen, physicians, mothers of the children, and other sources

Table 102. Description of sample in the Family History Questionnaire Study, by age, race, and school district, Year II Texas sample.

School District	White		Negro	
	Boys	Girls	Boys	Girls
Breckenridge	18	17	1	3
Waco	8	7	2	2
McKinney	1	0	0	0
Totals	27	24	3	5

available to them, including school records. The results were tabulated in relation to peer status as measured by the two-year average DT scores.

Results. Table 103 presents item frequencies and per cents, for high (above 5) and low (below 5) peer status groups, and Chi-square tests for item discrimination of peer status. Chi-squares were computed in 2 x 2 tables, using Yate's correction for continuity. It is apparent that the adverse family history comments summarized in this table are associated with peer acceptance-rejection in much the same manner as in the preceding study based on the open-end questionnaire. Although a multivariate analysis of these data would be appropriate with a larger sample, this was not considered feasible in the present study. The data for each category were adjusted to indicate presence or absence of the response as required for the Chi-square analyses.

Parents' Health. A score on this item indicates the presence of one or more of the serious illnesses listed in paragraph 1a of the questionnaire. This item was scored for the father and for the mother. The response frequencies were in the expected direction, but none of these items was significantly associated with peer acceptance-rejection.

Child's Medical History. Four dichotomous scores (1 or 0) were assigned for each child, for: (1) visual

Table 103. Frequency distributions and chi-square analysis of item responses on the Family History Questionnaire, for High and Low peer status children.

Questionnaire Item	Peer Relations Status Low Below 5.0 (N=25) f (Per cent)	 High ≥ 5.0 (N=34) f (Per cent)	Chi-square (df = 1)
Parents' Health			
Father	9 (36)	7 (21)	ns
Mother	5 (20)	5 (15)	ns
Either Parent	12 (48)	9 (26)	ns
Child's Medical History	9 (36)	4 (12)	4.95, p<.05
Visual, Hearing, or Speech Impairment, Child	8 (32)	1 (03)	8.21, p<.01
Speech or Hearing Problem, Child	6 (24)	0	6.64, p<.01
Death of Family Member	4 (16)	8 (24)	ns
Separation or Divorce	6 (24)	4 (12)	ns
Parental Attitudes			
Overprotects Child	4 (16)	1 (03)	ns
Do not cooperate with school	10 (40)	2 (06)	8.35, p<.01
Permissive about school absence	14 (56)	1 (03)	18.68, p<.01
Puts excessive pressure on child to achieve	1 (04)	1 (03)	ns
Psychiatric History			
Father	5 (20)	1 (03)	ns
Mother	6 (24)	2 (06)	ns
Sibling	1 (04)	0	ns
Family, except child	9 (36)	2 (06)	6.74, p<.01
Child	2 (08)	0	ns

Table 103 (Continued)

	Low Below 5.0 f (Per cent)	High ≥ 5.0 f (Per cent)	
Welfare History			
Family or child	11 (44)	2 (06)	10.07, $p<.01$
Criminal History			
Parent	6 (24)	1 (03)	4.26, $p<.05$
Child	9 (36)	1 (03)	8.96, $p<.01$
Personality Comments (Child)			
Lazy	15 (60)	3 (09)	15.47, $p<.01$
Immature	14 (56)	1 (03)	18.68, $p<.01$
Rebellious toward peers	10 (40)	1 (03)	10.72, $p<.01$
Frequently fights with peers	6 (24)	0	6.65, $p<.01$
Takes property of peers	7 (28)	0	6.92, $p<.01$
Lies excessively	10 (40)	1 (03)	10.72, $p<.01$
Dishonest, cheats at games	6 (24)	1 (03)	4.26, $p<.05$
Bosses other children	1 (04)	2 (06)	ns
Scared of Peers	2 (08)	0	ns
Shy, withdrawn	7 (28)	0	6.92, $p<.01$
Excessive daydreamer	5 (20)	0	5.07, $p<.05$
Lacks self-confidence	14 (56)	3 (09)	13.42, $p<.01$
Looses temper easily	7 (28)	1 (03)	5.72, $p<.05$
Dirty appearance	5 (20)	2 (06)	ns
Plays truant	7 (28)	0	6.92, $p<.01$
Rebellious toward teachers	7 (28)	1 (03)	5.72, $p<.05$
Alcoholism			
Father	1 (04)	0	ns
Mother	7 (28)	1 (03)	5.72, $p<.05$
Family Mobility	6 (24)	0	6.65, $p<.01$
Occupational History			
Father unemployed, can't hold job, etc.	12 (48)	2 (06)	11.89, $p<.01$
Educational History			
Child retained in school	15 (60)	2 (06)	18.02, $p<.01$
High School Graduate			
Father	4 (16)	19 (56)	8.03, $p<.01$
Mother	3 (12)	19 (56)	15.18, $p<.01$

impairment, (2) hearing impairment, (3) speech impairment, and (4) a history of serious illness as indicated in paragraph 2 of the questionnaire. None of the four item scores occurred frequently enough to evaluate separately. Only six children had histories of serious illness. Detailed analysis of the item responses in this category showed a prevalence of speech, hearing, and possibly vision problems, associated with peer rejection. Since speech and hearing problems affect intellectual functioning and social communication in the peer setting, this finding is not a surprise.

Social History of the Family. Incidence of death (item 3), separation, divorce and remarriage (item 4) were included in this category. The item, Death of Family Member, was the only one for which results consistent with the open-end questionnaire were not found. However, none of the items in this category discriminated significantly on peer acceptance-rejection.

Family Constellation. None of the items under this heading discriminated significantly on peer acceptance-rejection, but the presence of half-sibs in the home was in the expected direction.

Parental Attitudes. Discriminating response frequencies were obtained for four of the six items included under this heading. As shown in Table 103, two school-related items discriminated significantly on peer acceptance-rejection.

Psychiatric History. This category included a variety of psychiatric classifications, as well as one item which indicated that in the judgment of the interviewer a family member was in need of psychiatric examination. Thirty-six per cent of the low children and six per cent of the high children received positive family responses on this category. The difference is statistically significant. ($p<.01$).

Welfare History. Forty-four per cent of the families in the low and six per cent in the high sociometric groups were reported to have received welfare aid. The difference is significant ($p<.01$).

Criminal History. This category included reports of criminal behavior on the part of a parent or delinquent behavior on the part of the child. The responses obtained for both parents and children discriminate significantly between low and high groups.

Personality Comments (Child). Thirteen of 16 child traits rated by school personnel were significantly associated with peer rejection. The most significant differences reported described low peer status children as immature, lazy, and lacking in self-confidence, which may be a reflection of low intellectual ability and achievement. Another group of traits associated with peer rejection was characterized by socially undesirable behaviors: rebellious toward peers, rebellious toward teachers, frequently fights with peers, takes property of peers, lies excessively, dishonest, cheats at games, loses temper easily, and plays truant. Two other traits, shy, withdrawn, and excessive day-dreamer, were also associated with low peer status scores.

Alcoholism. Of the six items in paragraph 11 of the questionnaire, only Alcoholism received enough positive responses to permit evaluation. Seven mothers and one father were classified as alcoholic. The distribution with respect to mothers was significantly associated with peer acceptance-rejection.

Family Mobility. Twenty-four per cent of the families with children in the low group and none in the high group were reported as having moved often.

Occupational History. Responses indicating that the father was unemployed, often unemployed, had difficulty holding a job, and the like differentiated between low and high groups at the .01 level. Although similar results were not found in the preceding study, they are consistent with the developing conceptualization of the correlates of social acceptance in the peer group situation.

Educational History. Sixty per cent of the low children, but only six per cent of the high group had been retained in school for one or more grades. This difference was significant at beyond the .01 level.

Over half of the fathers and mothers of the high status children were reported to have graduated from high school, while only 16 per cent of the fathers and 12 per cent of the mothers of the low group had completed high school. The difference for each parent was significant beyond the .01 level.

Grouped Item Scores. Theoretically, peer-rejected children were expected to have a higher number of adverse item responses than those accepted by peers. Three scores based on combinations of groups of items were obtained for each child. These were: (1) Family background, items 1 to 5, 7 to 9, and 11 to 16; (2) Parental attitudes based on the six ratings in item 6; and (3) Child's personality based on the 18 ratings in item 10. Responses concerning fathers and mothers graduated from high school (item 14) were reflected to represent parents not graduated from high school. The proportions of scores above and below the median values for the three scales are shown in Table 104.

These data suggested that the three scores shared common variance representing the influence of the family on the child's peer relations. The three scores and DT, the measure of peer acceptance-rejection, were found to be highly intercorrelated, as shown in Table 105.

The mean and standard deviation of the selection variable, DT, indicated that the sample variance was considerably larger than the defined population variance (1.00) and led to the conclusion that the resulting correlations

Table 104. Proportions of high and low peer status children with scores above and below the median for three parts of the Family Background Questionnaire.

	Peer Status Category			
	Low		High	
	f	(Per cent)	f	(Per cent)
Part I: Family Background Items				
Below Median (0 to 3)	4	(16)	27	(79)
Above Median (4 to 15)	21	(84)	7	(21)
Part II: Parental Attitudes				
Below Median (0)	7	(28)	31	(91)
Above Median (1 to 4)	18	(72)	3	(9)
Part III: Child's Personality Comments				
Below Median (0 to 1)	8	(32)	30	(88)
Above Median (2 to 11)	17	(68)	4	(12)
Total (Sum of above)				
Below Median (0 to 4)	2	(8)	29	(85)
Above Median (5 to 24)	23	(92)	5	(15)
Number of cases	25	(100)	34	(100)

Table 105. Intercorrelations of three family background scores with peer acceptance-rejection (DT) for 59 children. Correlation coefficients above the diagonal are the raw empirical results. Those below the diagonal are corrected for overextension of range.

	Variable	Mean	S.D.	Correlations*			
				1	2	3	4
1.	Background Items	4.19	3.81	-	.69	.73	-.61
2.	Parent Attitudes	.66	1.02	.46	-	.62	-.66
3.	Child Personality	2.37	3.19	.45	.32	-	-.69
4.	Peer Acceptance-Rejection (DT)	5.17	1.73	-.38	-.42	-.45	-

Uncorrected: $R_{4(123)} = .75$

Corrected: $R_{4(123)} = .53$

*All correlations are significantly greater than zero, $p < .05$.

were inflated. In order to determine the levels of relationships expected if the sample had not been inflated on DT, the data were corrected for over-extension in range. The uncorrected correlations, shown above the main diagonal in Table 105, may be compared with the corrected correlations listed below the diagonal. The more conservative estimate is that about 25 per cent of the variance in peer acceptance-rejection is associated with the three scales derived from the questionnaire.

Summary. This followup study of family pathology using a structured questionnaire supported the results of the preceding study using the open-end inquiry. Although based on a smaller sample, the quantitative analysis further suggests a correspondence between the degree of family pathology and the degree of peer rejection.

PEER STATUS AND FAMILY BACKGROUND. A QUALITATIVE ANALYSIS

In 1962, as a means of providing detailed qualitative descriptions of representative children in the study to relate to the quantitative measures, and as an exploratory step toward the identification of relevant family background factors related to peer status, arrangements were made to obtain interivew data concerning a portion of the St. Paul sample. Similar interview data were collected subsequently in Minneapolis.

For a number of reasons, the interviews were held with classroom teachers. The most important of these were: (a) Teachers were regarded as qualified professional informants, situated in positions in which they could observe the children and have some productive contacts with parents, and (b) Arrangements for a limited number of teacher interviews could be made without difficulty, while negotiations with families involved a problem of some magnitude. In relation to the then exploratory nature of the inquiry, the less intensive and less public approach seemed more appropriate.

The interviews were conducted by visiting teachers on the staff of the respective school systems, who were compensated for the work which they completed during free time. The visiting teachers followed a structured interview outline, shown below, and dictated the information obtained using tape recorders. The tapes were later transcribed by project personnel.

Interview Sample

It was not feasible to interview all children in the total city samples. For the purposes intended, it was decided to obtain interviews on between 10 and 15 per cent of the children. The final arrangement in St. Paul produced 1,600 interviews, for 800 boys and 800 girls, constituting about 14 per cent of the city sample. In Minneapolis there were 864 interviews, half for boys and half for girls. The procedure was the same in both cities. Four interviews were held with every teacher in the sample. Two of these related to the lowest boy and the lowest girl in peer relations status. The third was based on the highest pupil in the class, whether boy or girl, and the fourth related to the middlemost pupil on the roster opposite in sex to the highest boy or girl. Thus it was intended to have an equal number of boys and girls, half in the lowest status and the other half approximately equally divided between middle and high status.

Structured Interview Outline. The interview outline given to the visiting teachers included four areas, as outlined below. The questions were specified, and the interviewers were expected to cover all of them, in the order as listed, in each interview.

I. Personal Characteristics of the Child.

1. Describe the child's physical appearance.
2. What individualizes this child? How is he like or different from other children?
3. What are his particular strengths or weaknesses?

II. Child's Behavior.

1. Describe this child's behavior on the playground.
2. Describe this child's behavior in the classroom and in the building.
3. Describe this child's behavior in relation to other students.

4. Describe this child's behavior in relation to his teacher.

5. Have you noticed any significant change in his behavior this year?

III. Classmates' Reactions.

1. What do you consider to be typical reactions of the other students toward this child?

2. What does he (or she) do to cause these reactions in the other children?

IV. Family

1. What do you see as significant strengths and weaknesses present in this family?

Analysis of Family Background Information

The last question, concerning the teacher's impression of particular strengths and weaknesses of the students' families, was used to explore family background factors related to peer status. It was realized that in many cases the teachers would have had no significant interactions with the families of their pupils, but it was considered desirable to get whatever information resulted from this question. Compared to the family descriptions present in the case history of a good child guidance clinic, these are, of course, brief. However, the analysis did yield a significant amount of information from a substantial number of families for every school studied in the two Minnesota cities. Thus the family information obtained comes from a broader sample than that of any study in which more intensive information is available. Usable family information was obtained for over half of the children for whom interviews were obtained; the proportion of interviews with usable family information was essentially the same at all socioeconomic levels.

Work with this family information has consisted of abstracting it from the interviews, developing categories which would fit it, and placing the statements in these categories in order to compare children who were high, average, and low in choice status, from families who were in different quartiles in socioeconomic division.

This sorting was done by workers who had no knowledge of the choice-status scores of the pupils whose interviews they were reading. (Of course, the interviews themselves gave some indication as to whether a child was predominantly liked-most or liked-least.) However, the initial placement of comments was rechecked on the basis of the family information alone, by still other workers who thus had no knowledge of either the choice-status score or the non-family interview information.

These descriptions of the family have been characterized as positive, neutral, and negative. As abstractly stated, the categories are more or less in line with expectations based on parental information in the general child literature. To give these general terms some concrete meaning, sample family descriptions abstracted from the interviews are included in the discussion that follows. These offer in many cases a sharply contrasting picture of "good" and "poor" parental practices as they relate to the social adjustment of the children.

Results

Table 106 presents comparisons of high-, average-, and low-child family information, broken down also by socioeconomic level. Since the primary interest in this analysis was in the discrimination between high-, average-, and low-child families, and since the full table, including the SES breakdowns, contains some cells which are either blank or contain a very small number of cases, the different SES levels were combined for the purpose of testing significance. With one exception, (economic deprivation) each "positive" and "negative" category showed a difference among the elements of the row being tested at the .01 level or better. The economic deprivation category was significant at the .05 level.

The differences among the "neutral" subcategories did not show comparable levels of significance, partly because of the small numbers involved. In addition, Table 106 presents some factors having negative "trends," which did not reach a satisfactory significance level, partly because the frequencies were not large. These are mentioned because of the attention they have sometimes received. "Parental rejection" has here been counted only when it was obviously

Table 106. Positive, neutral, and negative family factors for low, average, and high choice-status children of different socioeconomic levels*

Positive Factors

Descriptive Category:	Per cent in each Peer group Low	Average	High
Family is stable, secure, cohesive, warm, happy, do things together, etc.			
St. Paul SES 1 (high)	18	41	65
2	10	48	50
3	11	17	34
4 (low)	7	28	60
Minneapolis 3 & 4	7	25	35
Combined	10.3	31.1	48.0
Parents are active in PTA, cooperate with school, come for conferences, etc.			
St. Paul SES 1	31	43	40
2	14	39	43
3	15	22	39
4	10	36	55
Minneapolis 3 & 4	11	27	26
Combined	15.8	32.8	39.7
Parents are concerned about children, interested in children, want children to have advantages, care about children, etc.			
St. Paul SES 1	21	45	47
2	16	48	47
3	19	19	36
4	10	23	52
Minneapolis 3 & 4	16	35	33
Combined	16.1	33.8	42.3

*The percentages in the table show the proportions of the total number of children whose teacher interviews contained each particular category of family information.

Table 106 (Continued)

Neutral Factors

Descriptive Category:	Per cent in each Peer group Low	Average	High
Mother is employed full or part time.			
St. Paul SES 1	17	16	28
2	16	9	14
3	19	34	18
4	13	18	18
Minneapolis 3 & 4	17	22	19
Combined	16.4	20.0	19.2
Parents are separated or divorced.			
St. Paul SES 1	8	4	5
2	13	7	2
3	18	28	9
4	22	5	15
Minneapolis 3 & 4	20	24	20
Combined	16.5	14.4	10.7
Child lives with mother only (mother not remarried)			
St. Paul SES 1	7	4	3
2	6	4	3
3	6	14	11
4	14	8	10
Minneapolis 3 & 4	14	22	10
Combined	9.6	11.4	7.6
Child lives with one parent and step-parent.			
St. Paul SES 1	1	2	5
2	2	2	0
3	14	5	7
4	8	8	6
Minneapolis 3 & 4	9	8	6
Combined	6.9	5.2	5.0

Table 106 (Continued)

Neutral Factors (Cont.)

	Per cent in each Peer group		
Descriptive Category:	Low	Average	High
Parent or other person in home is physically handicapped, seriously ill, heart attacks, TB, cancer, etc.			
St. Paul SES 1	2	6	2
2	3	7	-
3	2	2	2
4	4	2	5
Minneapolis 3 & 4	7	4	4
Combined	3.6	5.3	2.5
Child lives with grandparents, relatives, in a foster home (parents are not present in the home).			
St. Paul SES 1	-	-	-
2	4	5	2
3	4	3	2
4	3	5	-
Minneapolis 3 & 4	9	3	2
Combined	4.1	3.3	1.3
Parent is mentally ill, seeing a psychiatrist, had a nervous breakdown, has been in a state hospital, etc.			
St. Paul SES 1	1	-	-
2	2	-	-
3	3	-	2
4	1	5	-
Minneapolis 3 & 4	5	5	2
Combined	2.4	2.3	.6
Parent is of low intelligence, not too bright, etc.			
St. Paul SES 1	-	2	-
2	2	4	-
3	1	-	-
4	6	8	-
Minneapolis 3 & 4	4	-	-
Combined	2.6	2.6	0

Table 106 (Continued)

Negative Factors

Descriptive Category:	Per cent in each Peer group Low	Average	High
Family is unstable, tense, unhappy, has many problems, conflict of authority, fighting, etc.			
St. Paul SES 1 (high)	11	-	5
2	20	5	2
3	17	10	-
4	24	11	8
Minneapolis 3 & 4	17	8	7
Combined	20.3	7.5	4.7
Parents don't supervise, are indifferent, unconcerned, lack authority, lack control, too busy for children, children are left alone frequently, don't care what children do, etc.			
St. Paul SES 1	14	2	2
2	12	5	-
3	10	9	2
4	28	11	5
Minneapolis 3 & 4	16	4	1
Combined	16.0	6.2	1.9
Parents uncooperative with the school, blame the teachers, critical, defensive, interfere with teachers, habitually fail to keep conference appointments, etc.			
St. Paul SES 1	17	2	3
2	14	2	3
3	15	8	-
4	27	6	3
Minneapolis 3 & 4	11	4	1
Combined	16.4	4.2	2.2

Table 106 (Continued)

Negative Factors (Cont.)

	Per cent in each Peer group		
Descriptive Category:	Low	Average	High
Family is financially deprived, on relief, has a hard time making ends meet, aid to dependent children, much below average for neighborhood, etc.			
St. Paul SES 1	7	-	-
2	13	-	-
3	11	2	2
4	10	7	5
Minneapolis 3 & 4	13	9	4
Combined	11.0	3.9	2.2
Factors Showing Negative Trends			
Parents are rejecting, want to put child in boarding home, resent the child, favor his siblings, ridicule child in front of teacher, etc.			
St. Paul SES 1 (high)	7	-	-
2	5	-	-
3	2	-	2
4 (low)	7	2	-
Minneapolis 3 & 4	7	3	-
Combined	5.7	1.0	.3
Child is spoiled, overindulged, given everything he wants, etc.			
St. Paul SES 1	3	2	-
2	4	-	-
3	6	-	-
4	2	3	2
Minneapolis 3 & 4	3	1	-
Combined	3.3	1.3	.3

Table 106 (Continued)

Factors Showing Negative Trends (Cont.)

Descriptive Category:	Per cent in each Peer group Low	Average	High
Parents are ambivalent, inconsistent, etc.			
St. Paul SES 1	3	-	-
2	1	-	-
3	7	3	-
4	1	-	-
Minneapolis 3 & 4	5	-	-
Combined	3.3	.7	0
Parents are overprotective, keep children home for little reason, walk child to school, child not allowed to leave his block, etc.			
St. Paul SES 1	6	2	2
2	9	-	-
3	4	3	11
4	10	8	6
Minneapolis 3 & 4	4	4	1
Combined	6.4	3.3	3.8
Parents are (were) in trouble with the law, in prison, ex-convict, etc.			
St. Paul SES 1	-	-	-
2	-	-	-
3	3	2	-
4	4	3	2
Minneapolis 3 & 4	5	1	1
Combined	2.4	1.3	.6

indicated and was omitted when the indication was based only on clinically-oriented interpretations, sometimes made, such as "the mother shows so much overprotection that it is rejection." So restricted, the term "rejection" as contrasted with "neglect" did not occur frequently. Other items in the "negative trends" group are "spoiled and over-indulged," "parents ambivalent or inconsistent," "parents have been in serious trouble with the law," and "parents overprotective."

The total number of cases from which family information was obtained was 581 for the low-choice children, 305 for the average, and 317 for the high-choice children. Since the total number of low-choice children was equal to the number of average plus the number of high children, the proportions yielding family information in the interview is about the same for the three groups.

Positive Factors. Three discriminable sets of items have been included under positive factors. These are unquestionably correlated. The first of these relates to a stable, secure family. The second indicates that the parents are active in the PTA and cooperate with the school. The third is that the parents are interested in their children, want them to have advantages, and care about them. Typical descriptions of families characterized predominantly by positive factors are as follows.

A. Family is stable, and so forth

Frank
This is a very supporting family. They do things together, making frequent trips and having family experiences. They provide many opportunities for the children. The standards of the family are high, and they do give freedom to Frank. There are no known weaknesses in this family.

Jane
The mother is active in things that involve the children and gives good care. The mother gives assistance freely to Jane and her siblings. She does show keen interest and insight in the children and involves them in many of the activities that are good for them. There is a strength within this family unit.

Gloria
Gloria comes from an excellent family. The parents are completely thrilled with her. They have great fun teasing each other. She has a little brother in kindergarten, and they are a very close-knit family. They do many things together as a family which are cultural and they take trips and have books, magazines, and music together.

B. Parents concerned about and interested in children

Pam
The mother came in for a conference. She is much interested in Pam's classroom achievement. The father went along on a trip with the group when they had an airplane ride. The mother took part in working with an immunization clinic this winter.

Herbert
The mother comes to school when Herbert has a part in a program and shows an interest in children. This is an Aid to Dependent Children family. The mother seems to manage well. The children are always well cared for and well groomed.

C. Parents active in PTA and cooperative with school

Roxanne
Roxanne comes from a very fine family as far as cooperation is concerned. Both parents come to

> PTA and are very interested in the children's school achievement.
>
> Larry
> Larry's parents are among the very best PTA members. His father has been president of the PTA, and his mother has been very helpful and willing on committees. They have good feelings toward school.

Neutral Factors. Descriptive characteristics included in this category are those in which the differences in family situation between low, average, and high choice status children are either not significant or small. Most of these refer to factual items such as the mother's employment, separation or divorce, parent's physical handicap or illness, and, in a very small number of cases, hospitalization for mental illness. It is not necessary to give illustrative comments for these. Although some of these might show a technically significant difference if the sample were greatly increased in size, assuming that they retained the same proportions, they would still be rather ineffective items in separating low, average, and high choice-status children. Some of the differences in these items between the different SES levels are more marked than the differences between low, average, and high children.

Negative Factors. There were four main negative factors: A. Family unstable, unhappy, conflict of authority, etc. B. Parental neglect, marked indifference, or lack of control over the children. C. Parents uncooperative with the school, defensive, critical of teachers, etc. D. Family financially deprived. Concrete illustrations from the school abstracts are as follows.

A. Family is unstable, etc.

Julie
Julie's parents are separated, and have been for a number of years. In fact, there have been two divorces. Mother seems to love Julie but at times is annoyed by her demands for attention which the mother is sometimes unable to handle.

Virginia
Virginia's mother should be hospitalized, according to teacher, because she seems to be quite paranoic. She seems to project blame on others. This mother is the mother of one illegitimate child and has been married on three different occasions, is definitely a walking paranoic person who is in constant trouble with the authorities, with ADC, and with the law, and on more than one occasion has been called down to court for possible child neglect, and has called me on several occasions. It is an almost impossible situation with this mother. The current father is nothing but a vegetable in many ways. He seeks a mother figure and he found it in this domineering, sick woman.

Ed
Ed has a stormy home life. His mother has remarried and now is having marital problems with the stepfather. Ed has a lot of home responsibilities--babysitting, etc. He seems concerned and interested in his family. He is the third of six children. Ed has moved frequently. This is his sixth school in six years of elementary school. Ed does not make his home difficulties known, and it is only of late that the mother has admitted to real physical abuses on the part of a drunken stepfather at times.

B. Parents unconcerned and uninterested in child.

Gail
Gail's mother rules heavily on her boyfriend who is on the road during the week but is present on weekends. Much of the disciplining is done by him. Mother finds it impossible to discipline and manage her boys.

Janet
Janet and her siblings have been eating lunch at a nearby high school cafeteria. Mother does not want to fix lunch for them. The mother is not critical of the school. She is rather indifferent to it. Her children have problems so she lives with these. This seems to be her attitude.

Kay
Kay's mother seems to be slowly falling apart, and the father has taken to spending a lot of time away from home, drinking excessively. The neglect is such that it is a real question whether there should be removal from the family at this point.

Ralph
Ralph's stepfather is engaged in politics, and at the time of elections the youngster gets very little attention as the mother is never in the home. The mother is extremely aggressive and seems to be more interested in her own needs and status than in the needs of her kids. She pays lip service to wanting the best for the youngster, but it not always able to follow through.

Jacob
Jacob comes from an extremely deprived family situation where there seems to be very little concern about the children and almost complete lack of supervision. At the present time he is being cared for by his grandmother. Jacob has often told his teacher of having never come home at night, and no one apparently has inquired about him.

Jean
Jean's mother is high strung, nervous, and on the defensive. In addition to poor health, she had a back injury and had to have surgery. She has been working long hours, leaving her children unsupervised. This mother has not given Jean any help with her school work and appears to be a person involved in many personal problems.

C. Parents uncooperative with school.

Luanne
Mother seems to enjoy the fights at school more than Luanne and her sister do. She usually says that there is prejudice, and she calls many names and so forth. The girls seem to enjoy having mother settle their difficulties.

Debby
Debby's mother does not do much to cooperate with the school. She does not interfere, but she certainly doesn't participate or give a great deal of herself. Neither is she too careful about attendance.

Clifton
The parents project all of Clifton's problems upon the school, using many excuses such as the fact that the school put him in an easy book when he should have been in a hard one. The parents' attitude since he started school was that he could do no wrong and that he was a very bright boy. In fact, the parents have sabotaged the efforts of the school to help Clifton. His parents have not allowed him to like his teachers or to cooperate with the school program.

Brad
Brad's mother is extremely antagonistic and hostile to school. She feels that her children have been picked on. She has not even been in a frame of mind when she has talked to school personnel that she accepts any direction in regard to the children. In fact, she usually has a very intense temper display, using foul language to school personnel.

D. Family financially deprived.

Lola
Mother receives Aid for Dependent Children for the three oldest and social security for the youngest three. She is a very poor manager and is always in debt; consequently Lola and her family have moved around a great deal.

Harry
There is a poor physical environment in Harry's home; low economic conditions, improper diet, and lack of food--often no breakfast.

Carl
Carl's father remains employed, which is a decided family strength, but his livelihood is not really sufficient for that many children. Guidance is inconsistent. Actual physical surroundings are bare and sparse. There is sometimes not enough food and insufficient clothing.

The negative "trend" factors are all lower in frequency of mention than the main negative factors. Illustrations of the "rejection" and "overprotection" parents are as follows.

A. Rejection

Louie
Louie's parents are separated. His mother has an extremely low opinion of him and refers to him as an "incorrigible monster."

Peter
Peter's mother does not know how to cope with him, neither does the father. She ridicules the boy constantly in front of the teacher, and evidently the parents whip him quite brutally with a belt.

Mary
The real father contacts the family on occasion--that is the other children--on birthdays and that sort of occasion. However, he really ignores Mary and presents birthday gifts and the like to an older sister who is more attractive.

B. Overprotection

Martha
The grandparents appear to be very interested in Martha and provide good care for the children. However, there is an overprotection, and the children are not allowed to walk even several blocks in the light of day. They are also encouraged to stay at home for minor ailments.

Stanley
Stanley's father often walks to school with him and checks on the children near the school and on the playground. He lives across the street from the school.

Summary. The contrast between some of the positive and negative families is very marked. It should be kept in mind that in both cases there is the kind of variability in outcome among their children which is indicated in the section on sibling resemblance. Not all of the children from the positive-category families came out high and not all of the children from the negative-category families came out low. The whole situation is a probabilistic one, and the data in Table 106 give a preliminary picture of the probabilities involved.

SUMMARY AND CONCLUSIONS

This Chapter has shown the complexity of the network of relationships of the measures of peer acceptance-rejection employed in this Study. Within the limits of the studies reported, they focus on family background in the broadest meaning of the term. The "family" was implicated by the comparison of resemblance on peer choice scores of siblings and unrelated classmates. This line of inquiry was extended when fraternal and identical twins were included. Twins were rated more alike than siblings even when they were in different classes. However, unlike-sex fraternal twins were less similar than like-sex fraternal twins, as were unlike- and like-sex siblings, demonstrating the effect of sex role as a source of variability.

These studies, as noted, implicated the family, but did not explain how family influence occurred. This was suggested by several exploratory studies, using questionnaires and interviews with teachers. The results of these studies indicated that almost every form of medical and social family pathology is associated with peer rejection. Low IQ, low socioeconomic status, family tensions, poverty, poor parental education, illness, both medical and psychiatric, neglect, and associated problems of conflict, prejudice, and tension related to ethnic minority, and presumably racial factors, appear to be involved. In addition, intrafamily relations, associated with birth order, have their effects.

A general hypothesis that was tested in the study reported in Chapter VI is that a complex of contributing factors and chain of reactions is generated by experience in the family which effects the child's personality in a manner that antagonizes peers and leads to peer rejection. This suggests such interpretations as the following. (1) Parents with poor education and of low socioeconomic status tend to provide their children with home environments that abound in obstacles to effective adjustment and which result in low self esteem and attitudes of hostility toward them and the environment. (2) Such parents have little opportunity to learn enlightened practices of child rearing and their behaviors toward their children actually provide guidance in self-effacement, self-depreciation, and hostility toward others. (3) Peer rejection is the reaction of peers to the backgrounds and personalities of disadvantaged children who appear poor, act hostile, and hold themselves in as low esteem as they are accorded by their classmates.

APPENDIX IV

FAMILY BACKGROUND QUESTIONNAIRE

FAMILY BACKGROUND QUESTIONNAIRE

Subject: ____________________, ____________________ ______________
Last Name First Name Nickname

Year of Study: ____________ I.D.: ____________________________ ____

Home Address: ________________________ ________________________ ____
Street and Number City

Parents' Name: ________________________, ______________________ ____
Last First

Father's Occupation: ____ ____

Mother's Occupation: ____ ____

1. PARENTS' HEALTH

a. Please circle Yes or No in the appropriate columns.

		Father	Mother	
(1)	Arthritic	Yes No	Yes No	____
(2)	Cancer	Yes No	Yes No	____
(3)	Cerebral palsy	Yes No	Yes No	____
(4)	Diabetic	Yes No	Yes No	____
(5)	Heart condition	Yes No	Yes No	____
(6)	Tubercular	Yes No	Yes No	____
(7)	Other chronic illness	Yes No	Yes No	____
(8)	Physically disabled	Yes No	Yes No	____
(9)	Injured in an auto accident	Yes No	Yes No	____
(10)	Disabled veteran	Yes No	Yes No	____
(11)	Hospitalized (bedbound)	Yes No	Yes No	____

	Father	Mother	
(12) Other	Yes No	Yes No	____

If yes, describe. ______________________________

Total Father ____

Total Mother ____

b. Do any siblings have a physical handicap? Yes No ____

If yes, what is the nature of the handicap? Describe

____

c. Is there an invalid living with the family? Yes No ____

If so, what is relationship to child?______________

2. CHILD'S MEDICAL HISTORY

Please indicate by circling Yes or No as appropriate the SUBJECT'S (child's) medical history:

Was a premature baby (7 mo. or less)	Yes	No	____
Visual impairment	Yes	No	____
Hearing impairment	Yes	No	____
Speech impairment	Yes	No	____
History of: Asthma	Yes	No	____
Brain injury (traumatic)	Yes	No	____
Cerebral palsy	Yes	No	____
Convulsions	Yes	No	____
Diabetes	Yes	No	____
Heart condition	Yes	No	____
Meningitis	Yes	No	____
Polio	Yes	No	____

Respiratory ailments	Yes	No	______
Rheumatic fever	Yes	No	______
Thyroid condition	Yes	No	______
Other	Yes	No	______

If yes to Other, describe. ______________________________

Excessively overweight, obese	Yes	No	______

If yes, indicate height (in.)_____ and weight (lbs.) _____

Underdeveloped for age, very small	Yes	No	______

If yes, indicate height (in.) _____ and weight (lbs.) _____

Has observable birthmark which detracts from his appearance		Yes	No	______
Child is crippled:	Finger missing	Yes	No	______
	Arm missing	Yes	No	______
	Leg missing	Yes	No	______
	One leg shorter than other	Yes	No	______
	Other (specify)	Yes	No	______

3. DEATH OF MEMBER OF IMMEDIATE FAMILY

a. Circle to indicate death other than by suicide for any member of immediate family.

(1) Brother	Yes	No	______
(2) Sister	Yes	No	______
(3) Mother	Yes	No	______
(4) Father	Yes	No	______
(5) Guardian	Yes	No	______
(6) Step-parent	Yes	No	______

c. Has any member committed suicide? Yes No ____

If so, who?____

d. If one parent is deceased, has the other remarried? Yes No ____

4. PARENT RELATIONSHIP

a. If both parents are living, circle yes or no as to parent relationship.

(1) Living together Yes No ____

(2) Separated, not divorced Yes No ____

(3) Divorced Yes No ____

(4) Divorced, mother remarried Yes No ____

(5) Divorced, father remarried Yes No ____

b. Is there an adult male in the family? Yes No ____

If other than father, explain. ______________________

c. Has father deserted the family? Yes No ____

d. Does father leave home for prolonged periods of time other than for business? Yes No ____

e. Parent married more than twice? Father Yes No ____

Mother Yes No ____

5. FAMILY CONSTELLATION

a. Child is cared for by:

(1) Parents at home Yes No ____

(2) Relatives Yes No ____

(3) Guardian Yes No ____

(4) Foster home Yes No ____

(5) Institutional home or orphanage Yes No ____

b. Are two or more non-related families living in the same house, including the subject's family? Yes No ____

c. Do other relatives reside with family? Yes No ____

Who?____

d. Give age and sex by relationship of other children living in the house.

	Age	Sex			
(1) Siblings	____	____	Yes	No	____
	____	____			
	____	____			
	____	____			
	____	____			
	____	____			
(2) Half-siblings	____	____	Yes	No	____
	____	____			
	____	____			
	____	____			
	____	____			
(3) Step-siblings	____	____	Yes	No	____
	____	____			
	____	____			
	____	____			
	____	____			
(4) Adopted siblings	____	____	Yes	No	____
	____	____			
	____	____			
	____	____			
	____	____			

e. Subject was:

(1) Born out of wedlock Yes No ____

(2) Adopted Yes No ____

(3) A foundling Yes No ____

(4) Taken away from parents by court Yes No ____

(5) Placed voluntarily by parents Yes No ____

f. Other children in the household were:

	No. of Each			
(1) Born out of wedlock	____________	Yes	No	____
(2) Adopted	____________	Yes	No	____
(3) Foundlings	____________	Yes	No	____
(4) Taken away from parents by court	____________	Yes	No	____
(5) Placed voluntarily by parents	____________	Yes	No	____

g. Sister has had a baby born out of wedlock?	Yes	No	____

6. PARENTAL ATTITUDES

(1) Overprotects the child	Yes	No	____
(2) Do not cooperate with school	Yes	No	____
(3) Permissive about school absences	Yes	No	____
(4) Put excessive pressure on child to achieve	Yes	No	____
(5) Restrict child from engaging in school social activities	Yes	No	____
(6) Exercise no disciplinary control over the child	Yes	No	____
Is there evidence of parental discord, i.e., fighting, friction, bickering?	Yes	No	____

Comment:____

7. PSYCHIATRIC HISTORY

	Father	Mother	Sibling	Child	
(1) Has been in mental hospital	Yes No	Yes No	Yes No	Yes No	____
(2) Was hospitalized for nervous disorders	Yes No	Yes No	Yes No	Yes No	____
(3) Has received psychotherapy	Yes No	Yes No	Yes No	Yes No	____

	Father	Mother	Sibling	Child	
(4) Had a nervous breakdown	Yes No	Yes No	Yes No	Yes No	____
(5) Has been under psychiatric observation	Yes No	Yes No	Yes No	Yes No	____
(6) Is emotionally ill	Yes No	Yes No	Yes No	Yes No	____
(7) Is febbleminded (mongoloid, hydrocephalic, microcephalic, brain injury, etc.)	Yes No	Yes No	Yes No	Yes No	____
(8) Is judged to be in need of psychiatric examination	Yes No	Yes No	Yes No	Yes No	____

8. WELFARE HISTORY

a. A welfare agency supplies (to family):

(1) Food Yes No ____

(2) Clothing Yes No ____

(3) Financial aid Yes No ____

b. Church contributes to support of family Yes No ____

c. Child receives aid such as:

(1) Free lunch at school Yes No ____

(2) Free milk at school Yes No ____

(3) Free medical care Yes No ____

(4) Free shoes or clothing Yes No ____

d. Child has missed school for lack of clothing or shoes Yes No ____

e. Source of income is:

(1) Relief check Yes No ____

(2) Social security benefits Yes No ____

9. CRIMINAL HISTORY

a. Parent arrested for:	(1) Bigamy	Yes	No	____
	(2) Theft	Yes	No	____
	(3) Rape	Yes	No	____
	(4) Non-support	Yes	No	____
	(5) Child neglect	Yes	No	____
	(6) Other offense	Yes	No	____

Specify other offense if possible:____________________

b. Child has history of:	(1) Stealing (serious, cars, etc.)	Yes	No	____
	(2) Rape victim	Yes	No	____
	(3) Rape offense	Yes	No	____
	(4) Petty theft	Yes	No	____
	(5) Vandalism	Yes	No	____
	(6) Other offense	Yes	No	____

Specify other offense if possible.____________________

	Father		Mother		
c. Parent has jail record	Yes	No	Yes	No	____
d. Other family members have jail record	Yes	No	Yes	No	____
e. Parent is in penitentiary	Yes	No	Yes	No	____

10. PERSONALITY COMMENTS

a. Circle either yes or no as to whether or not the item is characteristic of the CHILD'S behavior.

(1) Immature

(a) Sucks thumb	Yes	No	____
(b) Lacks bowel control	Yes	No	____

(c) Cries easily Yes No ____

(d) Emotionally immature Yes No ____

(2) Rebellious toward peers Yes No ____

(3) Rebellious toward teachers Yes No ____

(4) Frequently fights with peers Yes No ____

(5) Takes property of peers Yes No ____

(6) Bullies others Yes No ____

(7) Lies excessively Yes No ____

(8) Tells vulgar stories Yes No ____

(9) Exhibits lewd pictures Yes No ____

(10) Dishonest, cheats at games Yes No ____

(11) Bosses other children Yes No ____

(12) Scared of peers Yes No ____

(13) Shy, withdrawn Yes No ____

(14) Excessive daydreamer Yes No ____

(15) Lacks self-confidence Yes No ____

(16) Hyperactive Yes No ____

(17) Lazy Yes No ____

(18) Loses temper easily Yes No ____

(19) Dirty appearance Yes No ____

(20) Plays truant Yes No ____

(21) A tattler Yes No ____

(22) Other (Specify________________________) Yes No ____

TOTAL ____

11. BEHAVIOR OF MEMBERS OF FAMILY OTHER THAN SUBJECT: MOTHER, FATHER, OR SIBLINGS

	Mother	Father	Sibling	
(1) Alcoholic	Yes No	Yes No	Yes No	____
(2) Delinquent	Yes No	Yes No	Yes No	____
(3) Drug user	Yes No	Yes No	Yes No	____

Is parents' (both father and mother) behavior such as to cause gossip?	Yes	No	____
Is father's behavior such as to cause gossip?	Yes	No	____
Is mother's behavior such as to cause gossip?	Yes	No	____

If answer is yes to any of above, what is the nature of the gossip?____

12. FAMILY MOBILITY

(1) Members are itinerant workers	Yes	No	____
(2) Father in military, child moves often	Yes	No	____
(3) Father in military, leaves family behind	Yes	No	____
(4) Child has been transferred among several schools	Yes	No	____
(5) This family moves often	Yes	No	____

Estimate number of moves in past 5 years.________________

13. OCCUPATIONAL HISTORY

(1) Father is unemployed now	Yes	No	____
(2) Father frequently unemployed	Yes	No	____
(3) Father can't hold a job	Yes	No	____
(4) Father is marginal worker	Yes	No	____
(5) Father, a laborer, is not regularly employed	Yes	No	____

(6) Father is crippled and can no longer work at his usual trade — Yes No ____

(7) Father has a traveling job and is not home much of the time — Yes No ____

(8) Father is overseas (Military?________) — Yes No ____

(9) Mother supports family — Yes No ____

(10) Mother takes in laundry, babysits — Yes No ____

14. PARENTS' EDUCATION

	Father	Mother	
a. Parent			
(1) Is illiterate	Yes No	Yes No	____
(2) Educational level			
(a) Lower than 8th grade	Yes No	Yes No	____
(b) 8th to 11th grade	Yes No	Yes No	____
(c) High school graduate	Yes No	Yes No	
(d) Some college	Yes No	Yes No	____
(e) Bachelor's degree	Yes No	Yes No	____
(f) Higher than bachelor degree	Yes No	Yes No	____

15. BILINGUAL HOME

a. Child is from bilingual home — Yes No ____

b. Mother speaks English — Yes No ____

c. Father speaks English — Yes No ____

16. CHILD'S EDUCATIONAL STATUS

a. Has been retained:
- (1) One grade — Yes No ____
- (2) Two grades — Yes No ____
- (3) More than two grades — Yes No ____

b. Child has received "social promotions" Yes No ____

c. Child is in an "opportunity group" Yes No ____

d. Child has been placed in or removed from (last occurrence) special education classes for:

(1) Visually handicapped Yes No ____

(2) Deaf Yes No ____

(3) Orthopedically handicapped Yes No ____

(4) Homebound Yes No ____

(5) Mentally retarded (educable) Yes No ____

e. Child has a history of absenteeism from school Yes No ____

f. Child has been unable to demonstrate ability to achieve in school Yes No ____

CHAPTER V

FOLLOWUP STUDIES. LATER CORRELATES OF PEER ACCEPTANCE-REJECTION IN THE ELEMENTARY GRADES

V. FOLLOWUP STUDIES. LATER CORRELATES OF PEER ACCEPTANCE-REJECTION IN THE ELEMENTARY GRADES.

INTRODUCTION

The main thrust of this research program has been to identify antecedent correlates of peer acceptance-rejection and to illuminate the developmental processes involving peer relations that have appeared to exert such major influences on the child and young adult. The impetus for this research arose from Roff's followup studies, referred to in earlier chapters, in which peer rejection in elementary school was a strong predictor of young-adult maladjustment. Although the present investigation of the sources and effects of peer acceptance-rejection and associated variables was focused on a contemporary sample of elementary school children in grades 3 to 6, beginning in 1962, sufficient followup data concerning early delinquency and early school dropout have become available to test the basic hypothesis that peer rejection in the early grade period is predictive of subsequent adjustment problems. This chapter presents two studies, the first on early delinquency, based on Minnesota data, and the second on school dropout, using Texas data. The results of both studies strongly confirm Roff's original results and lend substantial support and generality to the general assumptions underlying this entire undertaking.

PEER STATUS AND EARLY DELINQUENCY

Juvenile delinquency is one of the socially significant later behavior categories to which the measures of peer acceptance-rejection collected in this study could be expected to be related. Other criteria of this kind include dropping out of school prematurely and being dealt with in a child guidance clinic. It is known from Roff's earlier work (1961b; 1963b; 1964) that a record of delinquency is not inevitably predictive of adult criminal behavior; in fact, the substantial majority of all juvenile delinquents eventually get along without serious difficulty. The problem of delinquency is still, however, an important one from both a theoretical and a practical point of view.

Definition of Delinquency. Although the term "delinquency" has a definite sound, its actual definition and the practices followed in dealing with it vary from place to place and from time to time. One dictionary definition is "a transgression of law....or offense. Or: a tendency to commit such offenses." In practice, there are various degrees of juvenile delinquency, and these are defined not only in terms of the offenses but also in terms of the apprehension and subsequent treatment of the offender.

First is breaking the law without being observed; in terms of frequency of occurrence, this would include practically everyone. Another degree is being detected by a policeman and verbally corrected, perhaps without even being known by name to the officer involved. This may occur with juveniles, as it may occur with adults for some minor traffic offenses. It is impossible to get accurate information on the frequency with which this occurs. A degree above this is apprehension and more formal admonition, either by an arresting officer or at a juvenile department. A great many youngsters have no history of delinquency after such an occurrence. A still higher degree, following further trouble or a more serious offense, consists in bringing the youngster into juvenile court where he may be adjudicated delinquent and put under supervision or on probation.

Because it has a certain administrative definiteness, the term "adjuicated delinquent" is probably the most commonly used single criterion of delinquency, in studies in this area. Like many other clear-cut administrative actions, the frequency with which youngsters are "adjudicated" varies from place to place, from judge to judge, and from probation office to probation office, so that its definiteness as a criterion is in practice more apparent than real. In any case, many youngsters never proceed beyond this point. If there is still further trouble, a decision may be reached to take the youngster out of an unsatisfactory home and neighborhood situation. In both the cities dealt with here, a boy could be sent to a county training school. It is easily possible to get a count of these individuals, and in this Minnesota group, other work by Roff (1964) indicates that about one out of five boys from the county training school were later sent to the state training school. Later, as they outgrow the juvenile age, a certain proportion of those sent to the state training school appear as adult offenders.

Approach

This section describes the results of a partial followup in terms of delinquency records for the two Minnesota cities. A parallel study on the Texas sample has not yet been made. Criterion information was collected in the probation offices of these two cities during the summer of 1966.

For the first of these cities, followup was four years after the initial choice-status scores were obtained. In the second city, this interval was three years. Since all those for whom data were initially obtained were in the third through sixth grades, the oldest children in the first city would have completed only the tenth grade, and in the other city, the ninth grade. We thus refer to the results presented here as relating to "early" delinquency.

The term "delinquency" as used here includes all cases in each city who had contact with the juvenile authorities formal enough to result in the preparation of a case file. Most, but not all, of these were "adjudicated delinquents." Almost all of their offenses occurred before they reached the age of 16. One consequence of this is that the difference in total frequency between different socioeconomic levels is not quite so sharp as it usually is, if juvenile delinquents of all ages are counted. Even if subsequent work on this project should change the picture presented here, were juvenile delinquents of all ages to be included, any validity that the present study of early delinquents may have will not be affected by such a change. This might simply lead to the recognition of a difference between early delinquency and later delinquency, which has received some, but very little, attention (Neumeyer, 1961).

Subjects

For budgetary reasons, delinquency information was obtained in the first city only for boys on whom teacher interviews had been completed in the spring of 1962. These structured teacher interviews were described earlier in connection with the analysis of family background data.

In the first city, interviews were obtained regarding 800 boys. A search was made in this city for "interview" boys in all four grades. In the second city, in view of restricted time and funds, a search was made only for the fifth and sixth grade boys. These seemed more likely to have acquired a delinquency record than the original third and fourth graders. Since delinquency occurs so much more frequently among boys, a search of these records for the comparable group of girls was postponed.

Of the 800 boys in City 1 for whom a search was made, files were found for 87, or approximately 11 per cent. The presence of a file meant that the boy had been apprehended, and had gotten far enough beyond a preliminary stage of consideration to have a file made for him, presenting the circumstances of his misbehavior and indicating the steps taken in an attempt to assist him. Allowing for the attrition in the sample due to those lost as a result of moving away from the city, the 87 found cases would be definitely more than 11 per cent of those still present in the area. It should also be remembered that those who were in the third grade at the time of initial testing are far from being through the delinquency period.

As mentioned earlier, the schools in each Minnesota city were divided into quartiles on the basis of a combination of income and education of the adults in the school district, based on the 1960 census figures. In the first city all four of these socioeconomic quartiles were used. In the second city, schools were obtained only from the third and fourth quartiles in socioeconomic status. That is, they were drawn only from the lower socioeconomic half of the city. This provided enough pupils to meet the pre-set sample size, and by concentrating on the lower half of the city, it was thought that the data would involve the area with the greatest incidence of later problem behavior.

Results

Figure 2 shows the incidence of early delinquency in City 1, broken down by the four socioeconomic quartiles for the entire city, and by high, middle, or low choice status at each of the four SES levels. This includes all the cases for whom interviews had been obtained. Since the interviewed cases included two low pupils per class, and only one high and one middle pupil, the number of low-choice pupils has been divided by two throughout this figure to make the number of low cases equal to that of the high and of the middle cases. With this exception, the frequencies shown represent individual cases rather than percentages. (A more comprehensive figure showing percentages is presented below for a different sample.) It may be noted in Figure 2 that the number of delinquents in the low/2 group consistently exceeds the number in the high and the middle groups in the upper three SES quartiles. This is in line with our expectations. In the fourth quartiles, however, the number of delinquents among the high-choice pupils was almost as high as the number in the low-choice group. This was contrary to our expectations and, taken by itself, might seem a chance effect.

Figure 2

ST. PAUL EARLY DELINQUENTS

HIGH, MIDDLE AND LOW CHOICE BOYS AT DIFFERENT SES LEVELS

ALL INTERVIEW CASES FROM LOW SES HALF

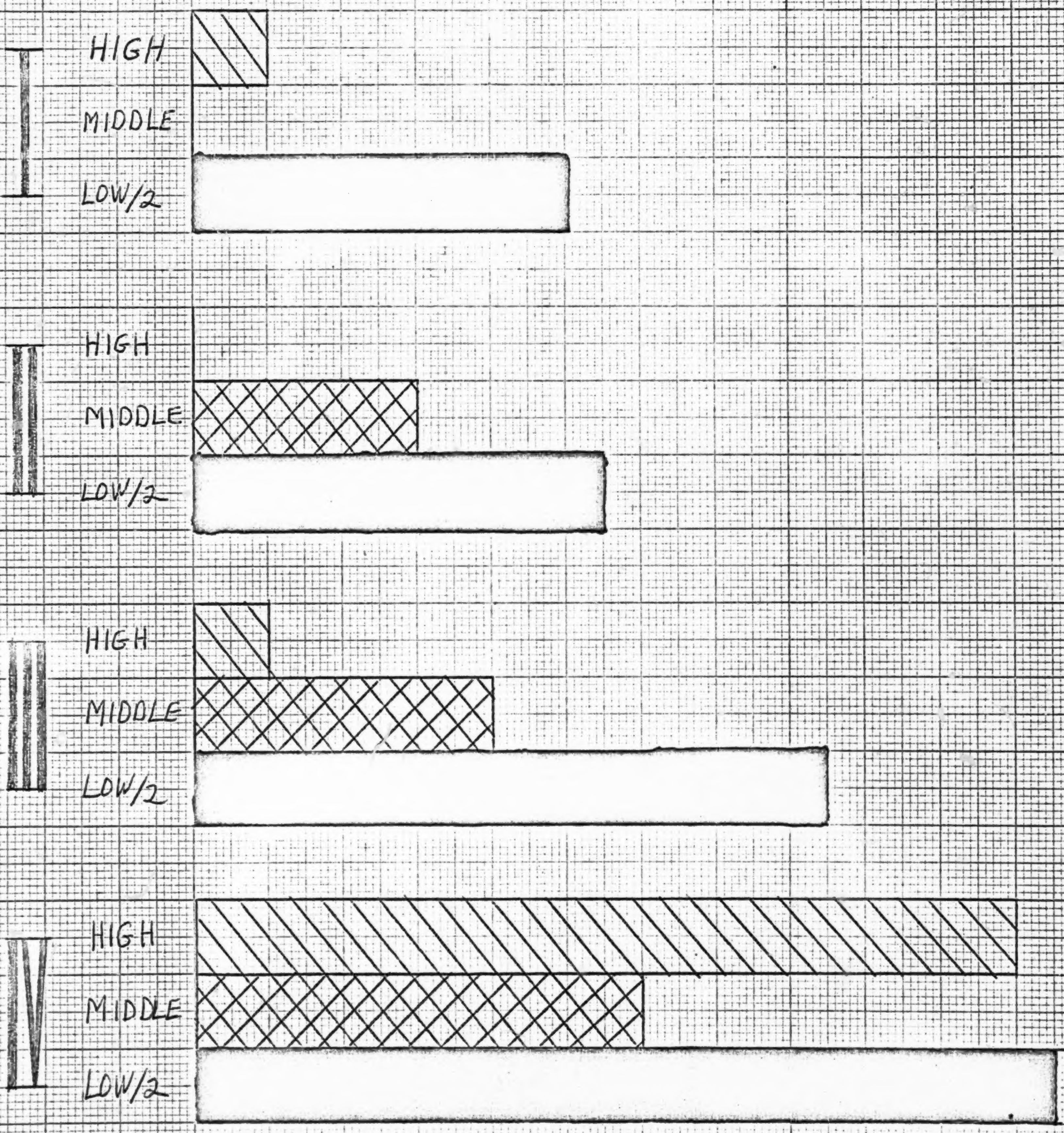


Figure 3 shows the results for early delinquents in City 2. Originally, each city was divided into SES quartiles, on the assumption that this was a fine enough subdivision socioeconomically for almost any purpose. We decided, however, that it would be more interesting, in looking at the results in City 2, for which we had schools only in the lower two SES quartiles, if each of these quartiles were divided into upper and lower parts. Using the same criteria on which the original division into quartiles had been made, the third and fourth quartiles were each split into upper and lower, and the results plotted. This sample includes fifth and sixth grade boys only. They also differed from the boys in City 1 in that three instead of four years had elapsed since the scores were obtained.

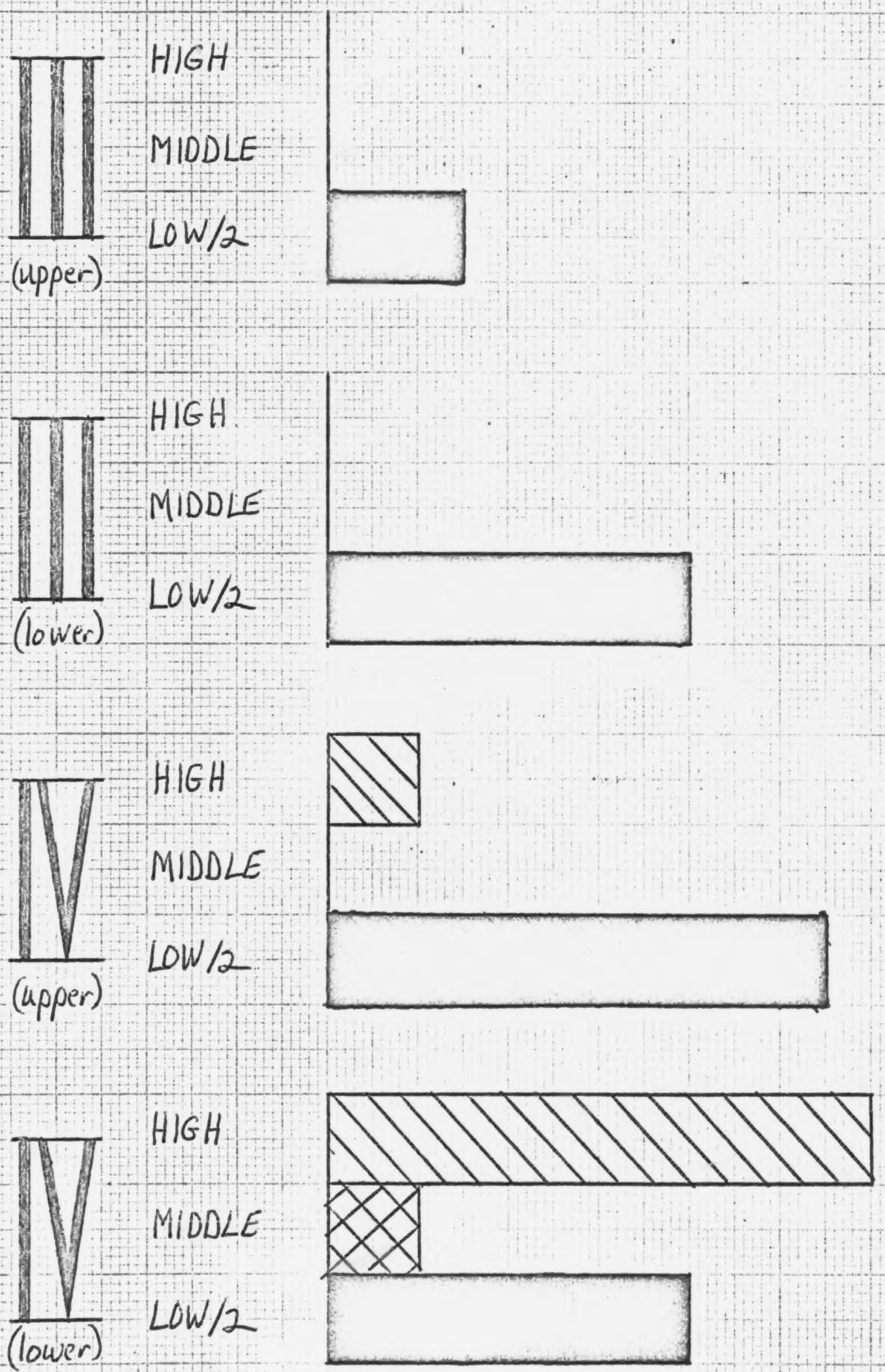
Inspection of Figure 3 indicated that there were no early delinquents at all among the high-choice or middle-choice boys in SES groups III (upper) and III (lower), and only one in group IV (upper). In group IV (lower) there are at least as many high-choice boys as low-choice boys with delinquency records, thus replicating the results of Figure 2 almost exactly.

Since there was an observable difference between the upper and lower parts of the fourth SES quartile, we returned to the data from City 1 and re-worked the third and fourth quartiles by upper and lower parts. The results of this are

Figure 3

MINNEAPOLIS EARLY DELINQUENTS

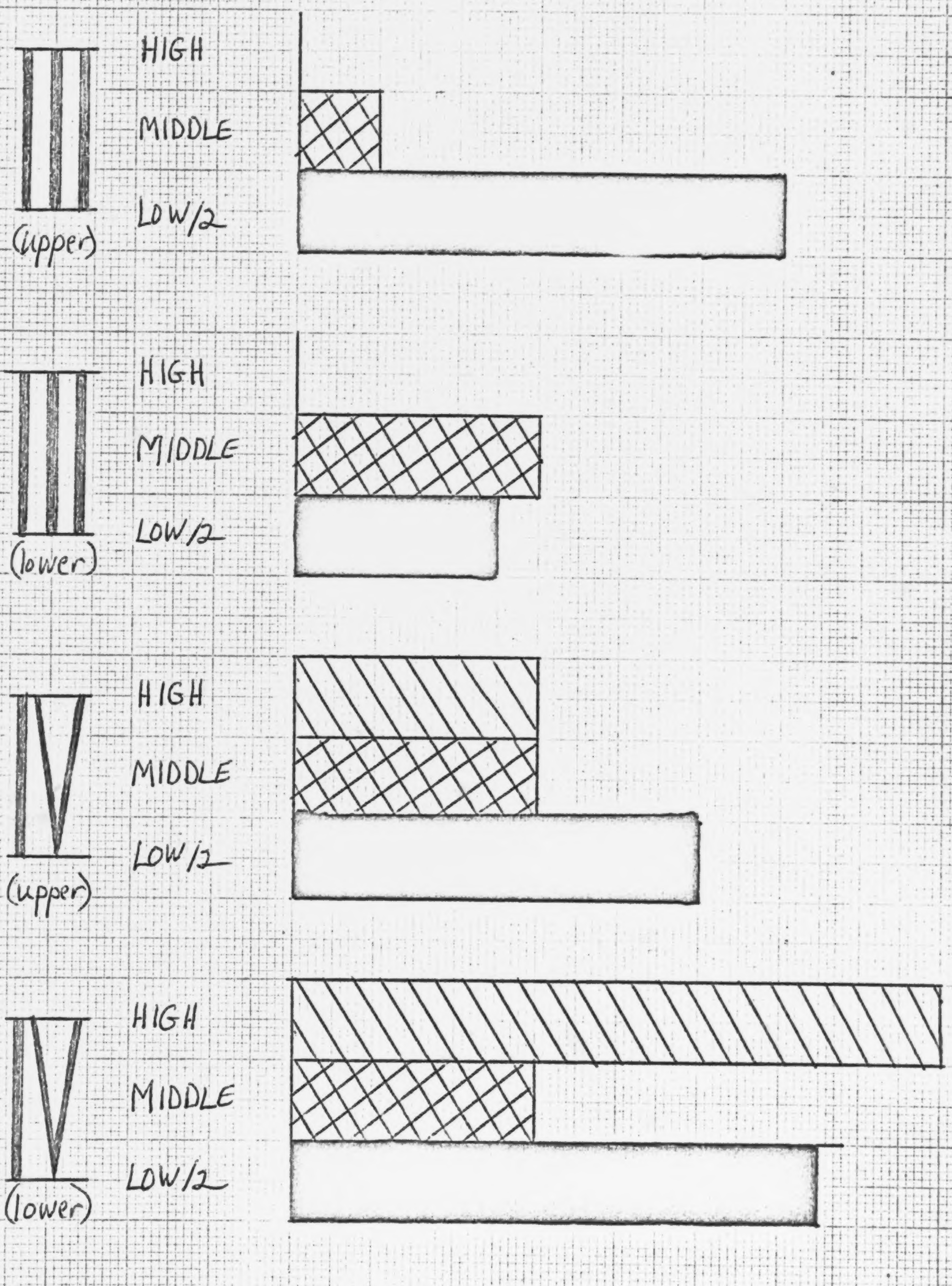
HIGH, MIDDLE AND LOW CHOICE BOYS AT DIFFERENT SES LEVELS
(LOWER QUARTILES SPLIT IN TWO)
INTERVIEW CASES = FIFTH AND SIXTH GRADES



shown in Figure 4. For the III (upper), III (lower), and IV (upper) SES groups, the results were approximately according to our original expectation. For the IV (lower) SES group, the number of delinquents among the high-choice boys who were delinquent, in accordance with what was becoming our new, revised expectation.

To fill in the omissions which resulted from the use of high, middle, and low boys, for whom we had interviews, information was obtained in City 2 for all the 1,729 fifth and sixth grade boys for whom first-year scores had been obtained. The total number found in the delinquency files was 187, or 11 per cent. Figure 5 shows the percentage delinquent for five standard score class intervals of choice status, for the four SES divisions of the schools of the lower half of the city. Again our expectations were approximated closely except for the boys with standard scores of 6.5 and above in the lowest SES group. Here the proportion delinquent was almost exactly the same as in the low-choice group with standard scores of 3.4 and below. The other standard score groups for the IV (lower) schools showed the same sort of patterning as did the schools in the other groups, and the high and middle groups of Figures 2, 3, and 4.

Figure 4



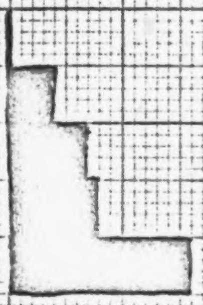
ST. PAUL EARLY DELINQUENTS

HIGH, MIDDLE AND LOW CHOICE BOYS AT DIFFERENT SES LEVELS
(LOWER QUARTILES SPLIT IN TWO)
ALL INTERVIEW CASES FROM LOW SES HALF

Figure 5

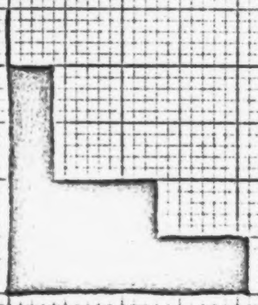
MINNEAPOLIS EARLY DELINQUENTS: BY SES OCTILES AND CHOICE STATUS (STANDARD SCORES) (ALL YEAR ONE SCORES: 5th and 6th GRADES)*

III (UPPER)



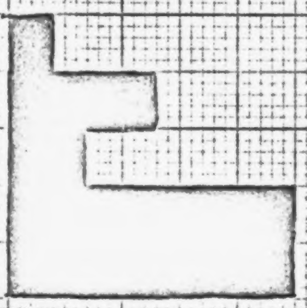
	N		%
6.5 + above	25	(0)	0
5.5 to 6.4	113	(6)	4
4.5 to 5.4	191	(14)	7
3.5 to 4.4	73	(6)	8
3.4 + below	30	(5)	16
	432	(31)	7

III (LOWER)



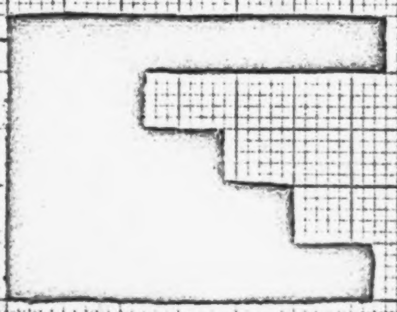
	N		%
6.5 + above	24	(0)	0
5.5 to 6.4	144	(6)	4
4.5 to 5.4	249	(9)	4
3.5 to 4.4	76	(10)	13
3.4 + below	42	(9)	21
	537	(34)	6

IV (UPPER)



	N		%
6.5 + above	24	(1)	4
5.5 to 6.4	110	(15)	13
4.5 to 5.4	157	(12)	7
3.5 to 4.4	89	(22)	25
3.4 + below	24	(6)	25
	404	(56)	14

IV (LOWER)



	N		%
6.5 + above	18	(6)	33
5.5 to 6.4	104	(8)	12
4.5 to 5.4	144	(27)	19
3.5 to 4.4	65	(17)	25
3.5 + below	25	(8)	32
	356	(66)	19

*with and without teacher interviews

ILLUSTRATIVE CASES

In the first year of the project, descriptions of selected high, middle, and low children in each class were obtained by interviews with teachers in order to provide a more concrete picture of the individual children than was given by the choice-status score alone. These descriptions have been found useful in many ways. In the present context, they give information about the child as seen by school personnel, including various factors in his life situation which may have had some relationship to his subsequent behavior. Selected cases are presented here to illustrate the way high and low-choice children at different socio-economic levels were described.

Upper SES Quartiles. As indicated in Figure 2, there was only one high-choice delinquent in the two upper SES quartiles in City 1. We can begin the illustration of the described behavior characteristics of high and low-choice youngsters with the single high-choice boy from the two upper groups and the two low-choice boys of high SES status. These are, respectively, Frank, who was high choice, and Thomas and John who were low-choice boys.

Frank

Frank (sixth grade) is a large, fat boy, extremely shy, who always looks dirty and unkempt, his clothes messy and his hair uncombed. Although he can do things all right, he looks awkward when doing them, particularly writing. He never volunteers for anything. He has been absent a great deal, usually three or four days at a time, with stomach trouble due to extreme nervousness. He is good at his work, tries hard, and when absent always makes an effort to do the makeup work so that he can keep up with the class. He is self-effacing, seems quite embarrassed when called on and shows much ambivalence in volunteering for things. On the other hand, he is beginning to take part in the teenage activity; they do giggle and laugh about the other sex, but he is quite upset when the teacher has to reprimand him. The teacher feels that in some ways this activity is an improvement and she would rather put up with much of his play with the other kids as long as he is doing what seems more natural and normal for him. She has had him for two years and has seen a decided change in his behavior, particularly in his asserting himself more than he used to do.

On the whole, though, Frank is still a rather passive individual in class. On the playground, he is definitely interested, and he comes back all out of breath, having been thoroughly active in the games. He speaks in an extremely tiny voice and seems afraid to make mistakes. He gives the impression that he would die if he made another mistake. He does not demand much attention of the teacher, just accepts her.

The other boys accept him well; he talks to them easily, they choose him on their sides when there is some sort of contest, and they give him much recognition when he does something well.

Little information on the family except that his mother was divorced from his father and is now remarried. Frank reflects his stepfather's interest in him and talks about the stepfather's experiences. The mother is cooperative toward the school, and the teacher feels that Frank definitely reflects kindness from mother and stepfather.

Probation Information:

Two years after testing, malicious destruction of property. Referred to parents. About a year after this, the mother became overtly psychotic. Soon after this, Frank was arrested for auto theft and placed on probation.

Thomas

Average-size sixth grader, fairly good development. He possesses average physical skills and generally can hold his own on the playground. Teacher estimates that he has above average ability; however, achievement is not up to what might be expected. Rather poor general adjustment. He is quite a problem. Has to be watched carefully. Major misbehavior such as throwing stones at cars and lighting matches on the school stairs. Untruthful and antagonistic, both toward teacher and classmates, so in general he is not well liked by his peers. He has one other friend, a boy who is also known as a "troublemaker."

Tom is restless, constantly on the move. He appears to be quite happy, is outgoing. The teacher believes that he has good possibilities. He is able to reason in a fairly mature fashion and seems quite sensible when called upon to discuss life in general. Both parents are working, and the boys (3) are left alone a good deal of the time. The teacher knows the parents are in disagreement as to how to handle the disciplinary problem. His father has rather strict standards, but the mother is on the other hand very permissive and perhaps unconcerned.

Probation Information:

Age 16 1/2: Possession of liquor and drunk. No record of either social agency contact or contact with the law for any other member of the family.

John

John is a very large fifth-grade boy, the largest in the class. He is also one year older than the others, having failed one year. Last year he broke his leg and he was somewhat lame; it is getting better now although he still is not too well-coordinated and is somewhat awkward at times.

He is a bully. He picks on younger children and does not play well with the kids in his classroom.

He is an apple polisher; he tries very hard to work his way into the group of children who are the most popular.

On the playground, John picks on the small participants and he is one of the last chosen. In the classroom he is very good, quiet, cooperative, and causes no disturbance. You hardly know he is in the room. Academically, he is below average, has a very difficult time getting his schoolwork done, but he works at his assignments.

His attitude toward other children is one of domineering them. He takes it out on smaller classmates and singles them out one at a time for picking on. He teases them, holds them down, takes their hats away, etc. His aggressiveness is not confined to overt fighting, but rather to some form of passive aggressiveness holding a child down to say uncle and not letting him go, or teasing. His relationship to the teacher is very good. He does what he is told and causes no trouble in the classroom. He tries to please the teacher and he brings things from home to show the teacher and the class. The trouble he is experiencing is all out-of-doors.

He has been doing better in school work, and there has been some progress in his relationship with others. The kids seem to accept him more now. He can now hit the ball and, being the biggest in the class, he's somewhat more accepted on the playground in athletics.

Most of the students let him alone. The smaller ones dislike him intensely and fight him off.

The mother is described as being very good. She will go to bat for the children. When they are wrong, she will punish them. John is the second youngest of five children, four of which are boys. At home there is a rather rough and tumble life, and John is picked on, being somewhat duller than his siblings.

Probation Information:
At 15, burglary. Lives with father and stepmother. There is no history of contact with any social agency, nor of any contact with the law by any other member of his family.

Lower SES Quartiles. Space does not permit the presentation of a case of this kind for all possible combinations of SES and choice status. Typical low-choice boys from the second and third quartiles are presented next (Paul and Randy). For both of these SES groups, the number of high-choice boys who became delinquent is very small.

Paul

A very small, undernourished fourth grader who has a cute face and is rather nice looking. He talks babytalk at times. He has no marked strengths. He is often dishonest at games and he generally makes a poor adjustment with others. Nevertheless, the teacher pointed out, there is some indescribable quality that makes this youngster likeable by adults.

On the playground, he is aggressive at times with other youngsters. He enters games and seems to enjoy them. In the classroom, he was described as sneaky. Sometimes in the classroom he displays bad temper. He treats others in the classroom in an aloof manner. He visits others occasionally but seems not to become too personally involved in social contacts. The group in return for his aloofness also treats him in an aloof, distant manner. A good relationship exists between the teacher and the pupil. She can correct and guide this youngster when he is not behaving properly. He has never shown any strong feelings toward the teacher.

He is totally disliked. The girls dislike him and the boys dislike him. The girls dislike him because he beats them up, and the boys dislike him because he's sneaky and because he doesn't follow the group's standards of behavior. He disturbs them because he does not follow directions and he is not fair.

The family is large and somewhat lower economically than their neighbors. The parents are not effective in directing the youngster or his siblings. There are economic problems that the family must face. The mother does not follow through consistently on any plan concerning the youngsters.

Probation Information:

When in second grade, picked up on three separate occasions within one week once for burglary, twice for petty larceny. No charge was placed. The following summer, he was arrested for burglary and put on probation for two years. Soon after school started, again caught for petty larceny. In the spring when in the third grade, he was arrested for burglary and sent to county training school. On release, again charged with burglary and prowling cars. Two months after this testing, burglary and arson, and again sent to Detention Home.

The father has a history of five arrests for assault and battery, drunkenness, and wife beating. About a year after testing, father hopitalized as psychotic. Oldest brother had history of six arrests, next brother had one arrest, oldest sister had six arrests, next brother had three arrests, and next sister had seven arrests. Mother described as showing serious emotional disturbance.

Probation report while in second grade: quite perceptive and capable of independent thinking and expressing himself. Open negative feeling to father. Lives for present. Expect severe destructive aggression in future. Severe character disorder manifested by impulsive acting out, impaired ability to enter into meaningful relation with others and considerable immature narcissism.

Mother and father divorced while Paul was in sixth grade; they tried to give him some attention, but this was difficult with ten children. Both drank too much.

Randy

A small, wiry sixth-grade boy with flashing eyes, a big smile, and usually neat appearance. Devil-may-care attitude. He doesn't seem to care if school keeps or not. Highly self-seeking, self-pushing, egocentric. Seems to need to make sure that everyone knows he is intelligent. He is very verbal, loves to recite orally, but hates written work. Tremendous memory for facts which he acquires from reading, TV and radio. He is a complete individualist. He isn't at all like the other children except that he does seem to want their approval. His answer to a list of offenses told him by the teacher was in the nature of debating style. "Now in the first place, I did not...." and so forth. He counts them off on his fingers. His strengths are his quick mind and wit, and his ability to think something through, although an IQ test suggests his ability is less than teacher had supposed. Almost analytical in his thinking. He has the ability to bluff. His greatest weakness is his complete lack of motivation. He seems willing to be far less than the best academically, partly because he is unwilling to reveal his shortcomings. He is almost criminal-like in his tendency to shift blame. Two juvenile officers came to school to talk to him about vandalism in a closed store, and with an innocent look he sent them to the junior high school to talk with his older brother, who was really just an onlooker. The officers soon returned.

On the playground, he wants to be a big leader, a strategist. He would have been a good Nazi. He is not outright cruel to others, but he lacks understanding of their feelings and fears. No one else matters. He is a good competitor in class games, is not a poor loser, and is satisfactory in supervised play, but in unsupervised activity he wants to be the supreme dictator.

In the classroom his behavior is not exceptionally bad. He has a tendency to be polite when he is criticized, and he seems to take it well even though he gives excuses. He gets his name on the board for little things, and he is constantly reported by guides and patrols.

He has fairly normal relations with his peers, in spite of his acting so superior, for he doesn't act superior with all the boys, nor all the time. He irritates the girls because of his acting so smart, and because of his frequent interruptions. He wants to be very friendly with the teachers, but he has difficulty achieving this, for he feels that rules made for others don't apply to him. Rules are for the ignorant ones. He doesn't outright defy the teacher, rather he seems to ignore. Sometimes he grins as though he has to go along because it is necessary for the rest, but he seems to say that you know and I know that I really don't need these rules.

Most of the children pass Randy off. They have been used to him a long time. His cuteness and sharpness can't help but impress some of these kids, even though he irritates them. His patronizing attitude of cutting in on others' recitations is one of the reasons why the children react to him as they do. He is also too aggressive. He is really a bully, even though he is small. He will try his bullying on a larger child even, but one who doesn't want to fight.

The parents are impressed by his factual knowledge, and they and his older brother and sister think he is cute. They are not as sharp as Randy. He is so well accepted by his family that he surely feels secure. A definite weakness is that the parents are not realistic in their appraisal, and they do not think the school appreciates their boy. They don't realize that he does not do the writing work expected of him, even though they have been told many times.

Probation Information:
During spring of sixth grade, he was arrested for malicious destruction of property. There is no subsequent record.

Lower Half of Fourth SES Quartile. The SES level of greatest interest here is the lower half of the fourth quartile or approximately the lower eighth of the boys in SES status. In this group, as indicated in all four charts, 2, 3, 4, and 5, there are as many high-choice delinquents as there are low-choice delinquents. Our interviews indicate that in general the high-choice boys were in tune not only with the other boys, but also with the teacher and the school in general. Insofar as both their peer status and the interview materials are concerned, they do not seem to be "personality problems." On the other hand, the low peer status boys in this SES level are characteristically disliked by the other boys and not so well in tune with the teacher and the school. There has been a good deal of talk in the literature about the "delinquent subculture." As a general explanation of all delinquency at this level, this represents an unproved assumption. It is closer to the facts to describe these delinquent boys as coming from a bottom economic level, which produces more than its share of delinquents, whether as members of a delinquent subculture or through the operation of other factors, such as family disorganization, "improper" rearing, etc. Edward is typical of these.

Edward

Edward (fifth grade) sometimes looks very neat and clean, and other times looks like he climbed out of a ragbag. Occasionally he doesn't even make it to school, apparently because of insufficient clothing. Edward is slender and appears undernourished. He is an attractive boy with a lot of drive. He probably is a good deal more sophisticated in the ways of the world than one would guess from his conversation. He's very nice and polite in school. Edward is a good student, but one handicap is that he rushes to get done.

Edward is a good ball player and a good sport and well-liked and one of the first to be chosen on any athletic team. In class the youngsters also like him very well and are quick to choose him. He's usually mannerly. He's no bother to anyone, would quickly reach out to help others. He's dependable and is listed as the best-liked boy in class. Good average intelligence. The teacher said that he could not be nicer to her; he's cooperative and courteous, wants to do well. He does not ask her for help. I think part of this comes from his being forced to be independent from his disadvantaged family.

He does things well, is quiet, does not make himself a pest.

A very unfortunate home situation. Mother apparently does try to help work with the youngsters. Neither mother nor father make conferences.

The father and mother could perhaps be adequate parents if they had one or two children, but with the extremely large family that they have, they are both overwhelmed. As a result the youngsters do not get the proper care and emotional help that they should get. Father is frequently away from home, separated from the mother; mother, in seeking companionship, is apt to reach out to other men and to entertain them and have them with her in her own home. This probably has some adverse effects for the youngsters. I see both parents as being rather immature adults who are apt to satisfy their own needs before satisfying the needs of the youngsters. As a result, the youngsters are many times left without the proper parental attention. Surprisingly enough, they seem to do quite well under these conditions. They are attractive, lovable, and likeable boys and girls. While there has been some petty thievery, some truancy, and some lack of application on the part of these youngsters, by and large they are happy, fairly well organized boys and girls, who seemingly make the most of what little life has offered them. Currently, there has been talk by the welfare agencies of the possibility of removal of the youngsters from this family. At this point, because again of the kind of adjustment made under these adverse circumstances, they have been reluctant to see the older youngsters go; it's the smaller ones that would be most hurt if they should have to leave, yet it's the small ones that perhaps would have the best chance to move on and more fully develop their capacities with the chance to live somewhere else.

Probation Information:

Edward had been arrested for malicious destruction of property and referred to his parents about a year before testing. About a year and a half after testing, he was arrested for shoplifting and put on probation for a year. Six months after this probation, he was arrested for burglary; at that time he admitted nine other burglaries. He was sent to the county training school, where he stayed for six months and remained on probation for another six months after that. This brings him almost up to the time of the followup.

The family was well known to various social agencies. An older brother was in an adult reformatory, and a second older brother was on probation at the time of followup. The family was described as being unstable without the father. The mother seemed unable to supervise and had had an illegitimate child about two years before followup. The psychological interview report said that there was nothing grossly abnormal or unusual about him. Stable mood, emotional reactions generally appropriate, though well-guarded; slightly unhappy, has some poor opinion about himself, is fairly energetic--likes people. A normal person is indicated.

It may be noted that although the description of this family situation seems to be adverse, apparently the boys and girls get along surprisingly well. Of course, there has been some petty thievery, truancy, etc., but both at the time of the initial teacher interview and at the time of the probation interview after he had gotten into trouble, he was judged to be a "normal person" who was exhibiting some misbehavior.

A somewhat similar picture is given by Joe, also a high-choice boy from the bottom SES group.

Joe

Joe (fifth grade) is small, short and stocky, very handsome, with a sparkling eye and a bright alert-looking face. He's very well coordinated. Distinguishing him from other children, is his quick smile, his sense of humor, and his tolerance and acceptance of others. He's extremely fair in all his dealings, seems to expect fairness in return and, generally, has a good, healthy outlook on life. Has leadership ability, accepts responsibility well, has an inquisitive mind, and is rather adult-like in conversation.

Joe does very well in playground participation, respects the rights of others and is a very good group member. He has athletic ability and is looked up to for this. He's often chosen as captain of a team, but this seems to be more because of his fairness in dealing with the other youngsters in a heated discussion than because of his athletic ability.

In the classroom he is very responsive. He participates willingly, volunteers regularly, has a great deal of background information. His tests indicate that he is overachieving. Youngsters are anxious to have him on committees and often look to him for leadership in class as well as on the playground and in the halls. He has been a good police boy. He's very well liked by the children. He has an older brother who has been involved in a great deal of delinquent behavior. The children have mentioned this to Joe, and he laughs and says, "Sometimes we are not all alike." He responds well to the teacher; he wants to please, but not in an anxious way. Joe accepts the teacher's role as a disciplinarian and will respond to discipline. He comes from a disorganized family. His mother has been married three times. The whereabouts of his own father is unknown. He did not get along with his first stepfather but does relatively well with this one. He has one brother and several half-siblings. The mother and the current stepfather have been fairly cooperative with the school, coming for conferences. The mother feels that the youngsters are capable of caring for themselves and has given them an undue amount of freedom. Joe has been able to use this very well, while other members of the family have not. The mother has indicated there is a lack of discipline within the home, and this is evidenced very clearly with other members but not with Joe. He is responsive to adults, respects authority, and generally is a happy, well-dispositioned child.

Probation Information:

About 18 months before the study, when he was nine years old, he was arrested for petty larceny and referred to his parents. Two and a half years after testing, he was arrested for malicious destruction of property and referred to the school authorities. A year after that he was arrested for incorrigibility, truancy, and running away from home and placed on probation.

His older brother was sentenced to the penitentiary for several years, a few months prior to the time when Joe was tested.

It may be noted that the personality characteristics described for him are generally very favorable ones. Neither originally nor later was he considered a personality problem.

On the other hand, if we take a look at a pair of low-choice boys in this bottom SES group, we find not only indications of delinquency but also indications of personality difficulties. Jackie is one illustration of this, and James is another.

Jackie

Jackie (fifth grade) is of average height, has fair hair, is fairly neat and clean--it varies. He is very loud, has a very mouthy, negative attitude. He can be caught doing something right in the middle of it, and he will deny that he had anything to do with it. He takes pins out of the bulletin boards, pulls the shades, throws the flowers on the floor, pulls the bristles out of brooms, and he usually thinks he is being very funny and he has six or seven children egging him on. The teacher felt that he is entirely different from everyone in her room. The assistant principal has said that he is a "crazy nut." He never works in the classroom. He does no spelling, no arithmetic, no reading. The teacher doesn't have too much trouble with him, but she is very dissatisfied with him. He is usually sent out of the room.

In the gym he is very uncooperative, not much coordination. He has to be protected to see that he gets his turn. He is not chosen very often; he doesn't play fair. If there is something that goes wrong he never says that it is his fault. He always blames somebody else.

The students do not like him because he creates problems. They think he is funny and they laugh, although he has no real friends. His relationship with the teacher is not very good. He is very difficult to handle. The students laugh at him and try to encourage him to go on with this behavior, but basically he is left out of the group.

The family background is not very good. The mother has been caught for shoplifting, and there supposedly was a boyfriend with the mother. The father has a job once in a while. Most of the time he is working on his car. There seem to be many family problems; they have been encouraged to go to family and children's service to get aid. Jackie's brother was sent through child study for a complete personality check-up and testing; however, they found that he needed status and this sort of thing. Jackie is showing somewhat the same behavior. He did go to remedial reading, because of his inability to read, last year, but he was absent so many times that he was not taken back this year. He is being seen at the time by a special teacher on the average of two hours a day to help him gain some status by catching up academically.

Probation Information:

Truancy and incorrigibility about a year after testing. Committed to the county training school for three months. Three months after that, violation of probation (truancy, absenteeing from home)--committed to county training school for an indefinite period. Within a week he ran away from training school and was returned. Within another week, he ran away from training school again and was returned. Considered incorrigible and sent to state training school. He was the second of seven children.

James

James (sixth grade) is the youngest of three boys in his family. He is overweight and self-conscious about it. The children tease him. He is lazy, slow moving, frequently avoids physical effort. He has dark skin and black hair.

His academic ability is better than his production indicates. It is difficult for him to get to work; once he starts, he will stay at it. In fact, on occasion he has spent the entire day on arithmetic. He likes questions that require thinking.

James will hit back, kick or swat anybody who walks past his desk. At times when in difficulty, he looks to the teacher for protection.

On the playground his sportsmanship is better than most of his teammates. His coordination is poor, but he likes to play. His coordination has improved somewhat this year.

In his classroom behavior, he aggressively acts out against the children and against the teacher. Teacher holds him briefly in his more explosive moments. After he quiets down, he will go to work. Limits have to be set and firmly held for him.

He tries to buy friends through giving candy, gum, and so on. He has one friend in the room, a boy who is quite emotionally disturbed. When he does not strike out against the children, some are apt to bring him to it. The children seem to have cast him in a role that will be very difficult for him to change. At the beginning of the school year, he screamed, lashed out at or walked out on the teacher. Now he still gets angry and will lash out at him, but he recovers from it more quickly and settles down more easily. There has been a slow but fairly consistent growth in self-control.

Children reject him. He almost demands this, despite his wanting to be liked and trying to buy friends. He starts many fights with children over petty things. The children fight back. He is gradually withdrawing from this kind of fighting. If children really start a fight with him, he will fight it through.

The teacher has only talked with his mother by telephone. She is interested in James, overprotects him, and will take his side against any other information that might be offered.

Probation Information:

In seventh grade, insubordinate in school; sent to county training school for six months.

Family had eight social agency contacts. Father attempted to murder mother and committed suicide when James was four years old. Mother was unstable, but willing to help. Psychological interview found: Impulsive, aggressive, seeks attention--many somatic complaints--inner self-control lacking. Marked dependency needs--poor peer relations--unresolved emotional conflicts (parents not desirous of seeking help)--not sociable.

Whereas Joe, above, was mentioned for his fairness, Jackie was described as "he doesn't play fair." And whereas Edward, above, was described as "very nice and polite in school," James was described as "hitting anybody who walks past his desk." These pairs of boys seem at the extremes of other continua besides that of peer status.

Negro Delinquents. Since there is a tendency in some areas for low economic status to be confounded with race, it was a matter of interest to see to what extent, if at all, the phenomenon that we are discussing here was attributable to race. Inspection of the abstracts, of which two are presented here, indicate that delinquent youngsters with both good and poor peer adjustment occurred in the Negro group. In these cities, less than four per cent of the entire grade-school population is Negro, and these are not all confined within the lowest SES group. The pattern found here may not fit other cities such as New York or Chicago where the proportion of Negro students is so much larger. It should fit a large number of cities where the ethnic composition does not differ too markedly from that of the present cities.

Of the two Negro cases presented here, Willy is not only liked by the other boys, but he is also diligent in his schoolwork, although his ability level is not high.

Willy

A sixth-grade Negro boy, well coordinated and in good physical condition. He is the number two boy in the school in control. The boys respect him and a great many are afraid of him. He seems to be a leader. A consistent good sport on the playground. At times he protects the underdog, but on occasion he may kick him.

Willy is a very dependable police boy. In school he works hard. He is of dull normal ability. Even though he is slow in classwork, he does not want his assignments cut down for him. His effort is great enough to complete his work. He is not always right, but he certainly tries.

Teacher, a man, gives Willy responsibility in the classroom, and he carries it out consistently. He does not assume responsibility if it is not given to him. Boys respect him and like him. There are several boys who would like to take his crown as number two man away from him. He is respectful, cooperative, and responsible. He is recognized by his peers for his leadership qualities. Strangely enough, for the position he holds especially in the estimation of the boys, he is not an aggressive leader. He always holds his own and gives an excellent account of himself when challenged. He rarely seems to challenge others.

There seems to be a gradual, consistent maturing in Willy this year. Children like his persistent trying, no matter what the job assigned.

His mother is cooperative with the school. She is much interested in her son. She wants him to be a good student and a good boy. Willy respects his mother and, on occasion, has told teacher of little things he has bought for his mother. They are a close family.

Probation Information:

Two months after testing, charged with immoral conduct and placed on informal probation. One month after that, auto theft and sent to county training school. In spring of seventh grade, truancy and returned to county training school. The following summer, shoplifting. No further trouble until ninth grade when charged with driving without a license and disorderly conduct; informal probation.

Has five older and two younger siblings; two older brothers have histories of delinquency. Father is delivery man, mother is housewife. Probation interview notes "lacks strong male influence--quite close-knit family--good sibling relationship."

On the other hand, Don is actively disliked and consistently nonconforming in the classroom. He has twelve siblings, some of whom also have records of delinquency. He is not described as being a boy who is getting along well within his own peer culture.

Don

Don is a dirty, sloppy, well-built, apparently healthy colored boy (fifth grade). He is a nonconformist with little consideration of others or of the situation. Athletics is

Don's only visible asset. His weaknesses are that he presents no apparent reasoning ability, is greatly retarded academically and is very inconsiderate of others.

On the playground Don tries to run the show, tends to bully, is quick with the fists. He has good athletic ability and skills, but shows poor sportsmanship.

In the classroom he talks constantly. He is consistently nonconforming. Rules are made for everybody but him. With others he is inconsiderate of their feelings; he may even knock heads together. He delights in proving his physical strength, even in adverse ways. He himself is not interested in others except by way of showing his strength.

With the teacher there is no communication either way. He may not answer at all; he often has an "I don't know" response, and there continues to be an impasse, no outright conflict, but no real rapport possible. There has been no change in Don's behavior during the year.

Others' reactions toward Don are that some fear him because of his size, some are disgusted with his behavior and lack of cleanliness. Those who are fearful of him because of his size, he tends to intimidate. His tangles with the law tend to appeal to some. Others may look to his ability in athletic skills. But even with the variety of responses, actual relationship with others is limited.

Don comes from a very large family. There are twelve or thirteen children. To observers there may appear to be parental apathy. However, there may be interests which are overlooked because of the overwhelming responsibility heaped upon this family. There is a sweet compliance on the part of the parents but an inability to follow through with guidance and with real care. The father remains employed, which is a decided family strength, but his livelihood is not really sufficient for that many children. Guidance is inconsistent. Actual physical surroundings are bare and sparse. There is sometimes not enough food and insufficient clothing. Many of Don's siblings are retarded, and several are in a great deal of trouble with the law.

Probation Information:

First delinquency recorded while in third grade, breaking and entering and petty larceny. In two days during fourth grade, charged with four offenses, primarily shoplifting and petty larceny; placed on probation for a year. In fifth grade, insubordinate in school and probation extended. In May of fifth-grade year, bicycle theft, insubordinate in school; committed to county training school for an indefinite period. In fall of sixth grade, assault; probation continued. In spring of sixth grade, insubordinate in school; committed to state training school. r

Had twelve siblings, seven older than he. Two older brothers and an older sister had repeated records of delinquency.

SUMMARY OF RESULTS

The contrast is sharp between the high and low choice boys in the bottom group. The interviews presented above give a clear picture of some of the behavior of the low-choice boys, who constitute one important group of delinquents; they are obviously not well accepted by their peers. The high-choice boys got along well, not only with their peers, but also with the school. The interviewed teachers were not, of course, totally unaware of the status of the boys that they were describing. They had had an opportunity to see some of the choices made, in the course of data collection, a month or two before the interviews. More important than this, they had opportunity to observe the younsters daily, and interviews concerning both boys and girls are full of comments such as "he (or she) is always the last to be chosen," or, at the other end, "he is a leader and is usually the first one chosen on the playground (or in the classroom)." Choosing is a frequently occurring activity, and youngsters who are not chosen can hardly fail to be aware that they are not.

At all levels above the bottom one, delinquency is progressively less frequent as we go up the scale of choice scores. In the bottom group, this is also true except for the highest status boys. From earlier work, we still expect these high-choice boys of the bottom group to make better adult adjustments than the low-choice boys.

DISCUSSION

This discussion has consistently referred to the delinquents followed up as "early". In the light of the emphasis placed upon gang activity in some discussions of delinquency (Cohen, 1955; Short and Strodtbeck, 1965), this group may at the time of the followup check still be too young for this to be as prominent as it may be later. With this reservation, it is of interest to compare the present findings with currently prominent points of view on delinquency. The literature on delinquency is very large, and space does not permit a comprehensive review of it here. To place our findings somewhat in the context of one particular part of the literature, reference is made to a conference report from the Children's Bureau in 1960, "Sociological Theories and Their Implications for Juvenile Delinquency" (Bordua, 1960). In an overall view, two theoretical positions quoted below are most prominent, particularly in accounting for group delinquency.

Theories of Delinquency

One of these sees the delinquent subculture as "arising out of the socially structured gap between the aspirations of lower-class boys and the means realistically available to them to realize these aspirations. According to this view, lower class socialization does not equip boys to perform according to the requirements of middle-class dominated institutions such as the school, and consequently the boys suffer 'status deprivation' and low self-esteem.... The delinquent subculture values precisely what middle-class institutions devalue; e.g., 'hanging around' instead of industriousness, aggressiveness instead of self-control."

"'Status deprivation,' then, provides the motivational core for the lower-class male delinquent subculture.... Equally crucial is the fact that 'status punishment,' in an institution such as the school, tends to be differentially concentrated in lower-class groups who are residentially concentrated in certain parts of any city."

This simply does not fit the picture given above of the present sample of boys at around the fifth or sixth grade level.

The second point of view sees the "beliefs and values of the street-corner group as arising, not from any situation of status deprivation, but as simply the adolescent version of 'lower-class culture.'....This position directly opposes the notion that the street gang or groups' culture derives from a reaction to the demands of middle-class culture. Instead, it emphasizes the view that 'lower-class culture,' as a more or less systematized body of beliefs, values, 'focal concerns,' and even household forms, has existed in its own right for generations and need not be considered as a reaction to beliefs, values, and household patterns of the middle class." One question that arose was "What is the evidence that there is a lower-class culture which the adolescents are considered to be reflecting?"

Delinquency Theory in Relation to Present Results

Our present results clearly support the second point of view and offer clear-cut indications of a difference in the pattern of delinquency at our upper and bottom social levels. At our upper social levels, delinquency appears as primarily a function of personality disturbance as reflected by low peer-group status. Almost no high-choice status boys from the upper levels were delinquent. At the bottom of our eight social levels, there was still a marked trend for the boys with low peer status to show delinquency more frequently than the average boys. Here, however, the high peer status boys exhibited delinquency almost exactly as frequently as the low peer status boys. Qualitative information available for these boys at the fifth and sixth grade levels indicates quite clearly that they were not at that time in rebellion against that so-called middle-class institution, the school. They got along well with their associates and exhibited a reasonable amount of ambition scholastically. In some cases the boy had already shown some delinquency at the time of our study, and the teacher sometimes mentioned this as casually as he or she would mention the color of his hair. Some of these boys gave a clear picture at this age of being "in tune" with their associates, and with the school, and with the teacher, although they sometimes came from highly pathological family situations. Nowhere in the literature, have we found anything which describes the total effect that is being described here.

In the present study, social levels were divided in terms of the education and income of the adults in the area. It seems clear, and is replicated from one to another of the two sample cities, that the lowest of the eight education-income levels produces a substantial number of boys during the pre-adolescent period who are not in any sense in rebellion at that time, although they may exhibit some delinquency, then and later. On the other hand, there is also a sizeable group, similar to that found more commonly at our higher levels, where the delinquency is accompanied by personality disturbance and a rebelliousness which seems to be personally rather than class oriented.

Because of their natural preoccupation with cultures and subcultures, discussions of delinquency by sociologists have tended to center on the gang and on organized group delinquency. Although adolescent gang activity is a frequently occurring phenomenon (which is recognized by some writers as occurring either in conjunction with, or independent of, delinquency), it is unduly restrictive to limit discussion of delinquency to gang activity. Psychological or psychiatric discussions tend to focus more on the characteristics of individuals which are associated with delinquency, whether the delinquency is on a group or individual basis. Again, there is a large literature which cannot be reviewed here in any detail. Mention must be made, however, of Jenkins' distinction between the socialized and unsocialized delinquent (1949).

The studies of delinquency employing the Minnesota Multiphasic Personality Inventory, of Hathaway and Monachesi (1953) and of Wirt and Briggs (1959), contribute important information about differences in personality patterns between delinquents and non-delinquents but do not break them down in detail in relation to socioeconomic status. Kvaraceus and Miller (1959), both of whom have worked intensively with delinquents, have discussed some of the satisfactions which delinquent behavior can bring to adolescent boys, particularly in the lower class. Conger and Miller (1966), using a sample of tenth-grade pupils in an entire city, studied certain personality variables in relation to social class and delinquency. With a social class criterion of per cent of dilapidated homes in an area, they used a dichotomous division for social class. This would not have permitted the differences found in the present study to appear, even if they had been there. None of the factual information from any of these sources is incompatible with the results presented here, but none of these have combined the characteristics of individuals with a detailed break-down of socioeconomic status.

The criterion of delinquency used here was that the boy's behavior was serious enough to lead to a preparation of a file for him. This definition was adopted in earlier work where we were concerned with studying the later outcome of delinquents and wanted to be sure we had a broad enough definition to start with. Occasionally, someone argues that "delinquency" is so vague a term as to be of no particular utility in the behavioral sciences. As defined for the present study, it proved to be precise enough to give very meaningful relationships with the peer group phenomena which we are studying.

CONCLUSION

The present results need replication with boys and girls in the Texas sample, and in other areas, to find the range of populations to which they can be generalized. It is expected that they will be replicable in samples not too much different from the ones used here. It may be possible to find groups with different ethnic or racial proportions in relation to socioeconomic level that will yield different results. In the meantime, we have a more detailed picture here than has been presented before of the relationship between choice status, socioeconomic level, and delinquency.

PEER STATUS AND EARLY SCHOOL DROPOUT

Although Roff's longitudinal studies indicated a relation between peer rejection in the elementary grades and young adult maladjustment, the rationale of the present study encouraged concern with more proximal criteria of maladjustment subsequent to elementary school. Another such criterion is school dropout.

In 1964, it appeared that a substantial number of children who participated in the Study in the first year had dropped out of school, and a formal inquiry was initiated. First, all nineteen school superintendents were approached and their cooperation was requested. On receipt of approval and promises of cooperation from all nineteen, a questionnaire, Report of School Dropout was prepared, and a quantity of these sent to all school coordinators early in 1965. Follow-up was restricted to eighteen districts; the district that excluded LL ratings was dropped from this study. Because of budgetary problems and personnel changes in the school districts that discontinued participation after the first year, it became necessary to send staff personnel to obtain the information from some of the districts. The final sample was assembled throughout 1965 and the spring of 1966. It was made up about half of questionnaires received by mail from part of the districts and the other half completed by staff personnel from school records and interviews with clerks, teachers, and other available persons at school district offices. One of the eighteen districts had no dropouts. A copy of the questionnaire is included.

Sample

Information was obtained on 191 dropouts for whom LM, LL, and LD scores were available. TR data were not available for 7 of these, 4 boys and 3 girls. Although the questionnaire requested information on occupation of parents, IQ of the child, reason for dropping out of school, and scholastic record, which were considered relevant to the relation between school dropout and peer status; this information was not completely available, and the missing data required some ingenuity in the analysis. Occupation of parents was provided for 122, or 63 per cent of the dropouts, IQ for 132, or 69 per cent; some reported "reason for dropout" for 147, or 76 per cent, and academic standing (passing or failing) for 103, or 54 per cent. Despite persistent efforts to obtain the missing information, the combination of passage of time and incomplete school records was an effective barrier.

Racial and Age Composition. The sample of 191 early dropouts included 100 boys, of whom 92 were White and 8 Negro, and 91 girls, of whom 80 were White and 11 Negro. In relation to the total Year I sample for the 18 districts followed up, these 191 dropouts represent 1 per cent of the population, who dropped out of school within four years of the first peer rating survey. Since the highest grade included in Year I was grade 6, these early school dropouts were not beyond grade 10 by the time they left school. Although the statutory minimum age for dropping out of school is 16, 47 of the 191 dropouts in this study were under 16. However, since they were reported as dropouts by the schools, they must have come under an exception to the law, the relevant portions of which are included in the Appendix to this Chapter. The incidence of early dropout was the same, 1 per cent, for total boys and for total girls. It was higher for Negroes than for Whites, as shown in Table 107, although still very low for both groups. It should be noted that the incidence statistics reported in this table refer only to early school dropout of a sample, observed initially in grades 3 through 6, after four years.

SES and School Progress. Data on SES and scholastic progress were considered essential for an understanding of the problem. However, overall statistics on the dropout sample could not be computed because of the large amount of

Table 107. Incidence of early school dropout after 4 years for a sample of 17839 school children observed initially in grades 3 through 6.

	Boys		Girls		Total	
	White	Negro	White	Negro	White	Negro
Number in sample	8795	419	8271	354	17066	773
Number of dropouts	92	8	80	11	172	19
Per cent of dropouts	1.05	1.91	.97	3.11	1.01	2.46

missing data. An estimate of SES was made on the basis of census reports for the communities in which the schools attended were located, and school progress was evaluated by comparing the ages of the dropouts with age expectancies, assuming normal entry and progress through school.

SES was determined on the basis of 1960 census reports citing median years of schooling completed by adults over age 25, for the census units appropriate to the schools involved. These are expressed in quartiles computed for the 87 Texas schools in the Year I survey. As expected, the majority (70 per cent) were from the two lower quartiles, and only 10 per cent were from the top quartile. Fifteen of the 19 Negro dropouts (6 boys and 9 girls) were from the lowest quartile; they represent 79 per cent of the Negro children, as compared with 20 per cent of Whites in the lowest quartile. The distribution of Negro and White boy and girl dropouts by SES quartile is shown in Table 108. It is apparent that race and SES must be controlled in examining the relation of school dropout to peer status.

School progress could not be evaluated by usual indices because of incomplete information. A satisfactory analysis was designed, however, which involved comparing age at time of dropout with age expected, on the assumption that each child had entered school at age 6 and had progressed at the rate of one grade per year up to the time of comparison.

Table 108. Distribution of dropout sample by SES level (median school grade completed by adults over 25 years of age).

	SES Level (Quartiles)				
	Low (≤9.0 years)	Low Middle (9.1 to 10.2)	High Middle (10.3 to 11.0)	High (≥11.1 years)	Totals
Boys	24	42	22	12	100
White	18	42	22	10	92
Negro	6	0	0	2	8
Girls	25	43	16	7	91
White	16	41	16	7	80
Negro	9	2	0	0	11
Total	49	85	38	19	191
White	34	83	38	17	172
Negro	15	2	0	2	19

The birthdates were available for 170 of the 191 dropouts. Of the remaining 21, 14 birthdates had been omitted from class rolls and 7 were added to class rolls after initial preparation, and their birthdates were omitted. Since actual dropout date was not available, the comparison date used was June 1, 1966, which was well beyond the date of the last dropout reported. For each of the 170 dropouts, actual age on this date was computed, as well as the age expected on this date based on assumed normal entry and progress to June 1, 1966, for his or her grade in the Year I survey. For example, a pupil in grade 3 in June, 1962, would have been 9 years old in June, 1962, and would be expected to be 13 on June 1, 1966, assuming normal age of entry and normal progress. Similarly, a pupil in grade 6 in June, 1962, would have been 12, and four years later, he would be expected to be 16. Table 109 presents a scatter plot of the actual and expected ages of the 170 dropouts included thus computed. The range of expected ages extends from 13 to 16, to reflect normal age of entry and school progress of pupils who four years earlier were in grades 3 through 6. The range of actual ages extends from 13 to 19, with a mean of 16.1 and standard deviation of 1.17. It is of much interest that five of the dropouts were only 13 years old.

The main diagonal, reflecting matched actual with expected age, is enclosed in squares. Frequencies along the

Table 109. Scatter Plot comparing expected age, based on normal age of entry and normal school progress to June 1, 1966, from initial grade in the first year (1962) survey with actual age on June 1, 1966, for 170 school dropouts.

Expected	Actual Age on June 1, 1966							
Age	13	14	15	16	17	18	19	Total
13	$\boxed{3}$		1					4
14	2	$\boxed{9}$	9	7	5			32
15			$\boxed{12}$	14	3	2		31
16		2	9	$\boxed{33}$	40	17	2	103
Total	5	11	31	54	48	19	2	170

diagonal reflect normal school progress; those to the left of the diagonal could be considered accelerated, while those to the right could be considered retarded. Looking first at the totals at the right which correspond to initial grades 3 to 6 in vertical order, it is apparent that this early dropout sample includes the full range of the initial sample, but that dropouts were more extensive in the higher grades. It may be expected that, as these children move up, the dropout statistics will increase. However, the most striking information in this table is that which shows that although dropout is associated with school retardation (100 of the 170, or 59 per cent) 13 (8 per cent) were younger than expected, and the remaining 57 (28 per cent) were at their expected ages. These results imply that while scholastic aptitude must be accounted for, as well as SES, in evaluating the relation of dropout to peer status, the hypothesis for a residual relationship appears to have some merit.

A higher proportion of retarded among the early dropouts in this sample was obtained from the questionnaire item on scholastic performance at the time of dropout. Eighty-nine or 86 per cent of 103 pupils for whom this information was provided were recorded as failing in school work at the time of leaving school. It is difficult here to evaluate bias due to nonreponse as for other incomplete items. However, the preponderance of school failures among the dropouts is not surprising.

Reasons Given for Dropping Out of School No reasons for dropout were available for a fourth of the boys and a fifth of the girls, but although those advanced for the remainder are interesting, as shown in Table 110, they must be viewed with caution. While these "reasons" may have some value in identifying salient, precipitating factors when known, it is believed that so complex an event as dropping out of school must be the resultant of complex patterns of antecedent factors, including, as already demonstrated, SES and race, which are interdependent in the samples studied, intellectual or scholastic aptitude, as well as other factors such as peer status. The object of the present analysis is to examine the unique relation of peer status to school dropout. However, the items listed in Table 110 are reported as representative of the apparent reasons as seen by school personnel from whom this information was obtained.

It is worthy of mention that failure to perform scholastic work is not mentioned. For a majority of boys in this sample, the reasons advanced emphasize failure of the school to challenge them; delinquency is relatively infrequent. A major portion of the girls combine disinterest in school with marriage, which is a socially acceptable avenue of withdrawal in the culture.

Table 110. Summary of reasons given for dropping out of school.

	Reason	Boys	Girls
1.	Quit, non-attendance, not interested	48	26
2.	Quit to go to work	12	2
3.	Needed at home	1	1
4.	Marriage	2	26
5.	Pregnancy	0	8
6.	Suspended	7	1
7.	Illness	0	3
8.	Sent to reform school	5	5
9.	No reason given	25	19
	Totals	100	91

Procedure

Samples of early dropouts from the total available group of 191 were compared with matched samples of non-dropouts on LM, LL, LD, and TR. Three comparisons were made, with dropouts and controls matched as follows:

1. Each sample consisted of 132 children matched on: grade, sex, and IQ.
2. Each sample consisted of 122 children matched on: grade, sex, and SES (based on Warner's Social Class Index of parent's occupational level).
3. Each sample consisted of 102 children matched on: grade, sex, IQ, SES (as in 2).

In addition, the distribution of the total dropout sample was compared with the total Year I Texas sample on LM, LL, LD, and TR. Although not controlled for significant suspected sources of variance, this comparison is of interest to understand the general trend of relationship. In the matched groups, race was not employed as a matching variable because of the small number of Negro dropouts. Further work on this problem should unquestionably take this into account. However, in the present study, race and SES overlapped greatly.

Results

Table 111 compares the percentage frequency distributions of the total dropout sample with that of the Year I total Texas sample on LM, LL, LD, and TR. It is apparent that the dropout distribution is overrepresented in the "rejected" range on all of the peer status measures. At the

Table 111. Comparison of percentage frequency distributions of total dropout sample (N = 191) and total Texas sample, Year I, on LM, LL, LD, and TR.

	Percentage Frequencies							
	LM		LL		LD		TR	
z-score intervals	Dropout Sample	Texas Sample	Dropout Sample	Texas Sample	Dropout Sample	Texas Sample	Dropout Sample	Texas Sample
7.5-7.9	.5	.7				.1		
7.0-7.4	1.1	2.9			.5	.9	.5	.1
6.5-6.9	2.7	6.4		.2	1.6	4.9	1.1	2.7
6.0-6.4	2.7	9.5	4.8	6.9	3.7	11.3	3.2	14.6
5.5-5.9	7.4	11.0	21.2	34.8	11.1	16.4	4.8	9.0
5.0-5.4	10.1	17.2	18.0	25.6	12.7	22.2	21.2	21.0
4.5-4.9	17.0	16.9	15.9	10.1	20.7	17.7	28.6	34.2
4.0-4.4	36.6	24.4	11.1	7.6	20.1	12.4	17.0	8.3
3.5-3.9	22.3	10.0	8.0	5.3	11.7	7.2	11.7	5.7
3.0-3.4	1.1	1.0	10.1	3.8	12.7	4.4	3.2	2.8
2.5-2.9		.1	5.8	3.1	5.3	2.0	3.7	1.1
2.0-2.4			4.2	1.7	1.1	.5	2.7	.4
1.5-1.9			2.1	.7				.1
1.0-1.4				.1				
Not rated							3.7	
Per cent <5	77.0	52.4	57.2	32.4	71.6	44.2	72.5*	52.6

*Adjusted for 3.7 per cent not rated.

Bottom of this table is listed the per cents of the distribution below a z-score of 5. These are over 70 for the dropouts as compared with per cents in the 50's for the total Texas sample for LM, LD, and TR. However, for LL, while the group difference remains about the same, the per cents below 5 are much lower. Table 111 shows a substantial difference between dropouts and the general school population in peer status but does not control for well-known sources of variance that partially account for school dropout. The following analyses were designed to take IQ and SES into account.

Peer Score Comparisons of Groups Matched on Grade, Sex, and IQ. It was possible to match 132 pairs of dropouts and non-dropouts, drawn as far as possible from the same schools, on grade, sex, and IQ. The male and female members of these pairs were then assigned to samples for comparison on peer scores. The male samples consisted of 71 boys each, and the female samples of 61 girls each. Critical ratios, comparing matched sample means on LM, LL, LD, TR, and also on IQ, are shown in Table 112. As shown in the bottom part of this table, the matching was imperfect although the differences between means were small and nonsignificant.

Inspection of Table 112 shows that the dropout boys are significantly lower than the non-dropout boys on LM and LD. On LL, the means for dropout boys are lower than those for

Table 112. Comparison of mean LM, LL, LD, TR scores and IQ's of school dropouts with non-dropouts matched on grade, sex, and IQ.

		Dropouts			Non-Dropouts			
Variable	Sample	N	Mean	S.D.	N	Mean	S.D.	Critical Ratio (one-tail test)
LM	Boys	71	4.54	.72	71	4.89	.91	2.50, $p<.01$
	Girls	61	4.58	.89	61	4.76	.80	1.12 ns
	Total	132	4.56	.80	132	4.83	.86	2.58, $p<.01$
LL	Boys	71	4.46	1.15	71	4.73	1.10	1.46 ns
	Girls	61	4.59	1.23	61	4.75	1.10	.76 ns
	Total	132	4.52	1.19	132	4.74*	1.10	1.58 ns
LD	Boys	71	4.43	.92	71	4.78	.99	2.21, $p<.01$
	Girls	61	4.50	1.06	61	4.70*	.92	1.08 ns
	Total	132	4.46	.99	132	4.74*	.96	2.34, $p<.01$
TR	Boys	68	4.64	.83	71	4.87	.72	1.32 ns
	Girls	61	4.53	.92	61	4.73	.81	1.24 ns
	Total	129	4.59	.87	132	4.81*	.77	2.08, $p<.01$
IQ	Boys	71	84.4	14.4	71	86.5	13.4	0.9 ns
	Girls	61	87.8	12.4	61	88.4	12.5	0.7 ns
	Total	132	86.1	12.3	132	87.5	13.0	0.8 ns

*Indicates means for Non-Dropout Group is significantly lower than the population mean of 5.0 with S.D. of 1.0, one-tailed tests.

the non-dropouts, but not significantly so. The means of girl dropouts are lower, as expected, than those of non-dropouts on all peer variables, but none of the differences is statistically significant at the .05 level. As a result of the trend of the differences for boys and girls separately, the differences do reach significance for three of the variables, LM, LD, and TR when the samples are combined. None of the differences on LL was significant.

Taken literally, the results shown in Table 112 suggest that with IQ controlled by matching, dropouts are distinguished from non-dropouts on peer status measures. The discrimination is consistent in direction of differences for girls but not significant in the samples used. However, when the smaller girl samples are combined with the boy samples, the discrimination is significant on LM, LD, and TR. The same variables discriminate dropout boys significantly from non-dropout boys. The reason for the failure of LL to discriminate in this analysis is not clear.

Peer Score Comparisons of Groups Matched on Grade, Sex, and Parents' Occupational Level. The same four peer status variables were similarly compared using four other groups, overlapping the previous ones in composition. The new groups were matched on grade, sex, and SES based on Warner's Social Class Index scores for parents' occupational level (Warner et al, 1949). Although IQ was not a matching variable in this comparison, the matched groups were closer together on mean IQ than in the preceding analysis, as shown in Table 113. Matching on SES scores was very close, as reflected by means and standard deviations. The matched samples contained 65 pairs of boys and 57 pairs of girls, and 122 combined-sex pairs.

The results shown in Table 113 are similar to those in Table 112 in that all differences are in the expected direction, with dropout means lower than those for matched non-dropouts. The same pattern emerged with respect to sex differences and the LL scores. However, in this analysis the girls' results are significant for LM and LD and a significant difference was found for LL on the combined-sex sample.

Peer Score Comparisons of Groups Matched on Grade, Sex, IQ, and SES. Table 114, based on matched samples of 57 pairs of boys and 45 pairs of girls (102 pairs combined), presents similar comparisons for smaller groups matched more closely than above on both IQ and SES. Apparently, the gain realized through better matching is compensated by the loss of numbers in significance testing. The results are essentially the same as in Table 114.

Conclusion

These data provide strong evidence that peer rejection is associated with dropping out of school, and that peer

Table 113. Comparison of mean sociometric scores of school dropouts with non-dropout controls matched on socioeconomic status.

		Dropouts			Non-Dropouts			
Variable	Sample	N	Mean	S.D.	N	Mean	S.D.	Critical Ratio (one-tail test)
LM	Boys	65	4.53	.80	65	4.98	.97	2.85, $p<.01$
	Girls	57	4.56	.86	57	4.85	.80	1.80, $p<.05$
	Total	122	4.55	.83	122	4.92	.90	3.32, $p<.01$
LL	Boys	65	4.45	1.16	65	4.76	1.17	1.54 ns
	Girls	57	4.59	1.27	57	4.92	1.02	1.54 ns
	Total	122	4.51	1.21	122	4.84	1.10	2.17, $p<.01$
LD	Boys	65	4.43	.96	65	4.86	1.07	2.44, $p<.01$
	Girls	57	4.51	1.08	57	4.87	.90	1.94, $p<.05$
	Total	122	4.46	1.02	122	4.86	1.00	3.11, $p<.01$
TR	Boys	63	4.58	1.01	65	4.86	1.08	2.16, $p<.01$
	Girls	56	4.58	.62	57	4.72	.75	1.03, ns
	Total	119	4.58	.84	122	4.81	.99	2.35, $p<.01$
IQ	Boys	57	85.4	13.21	57	85.9	13.06	
	Girls	45	87.4	11.46	45	87.1	11.13	
	Total	102	86.3	12.51	102	86.5	12.32	
SES	Boys	65	6.14	.97	65	6.14	.97	
	Girls	57	5.98	.96	57	5.98	.96	
	Total	122	6.07	.97	122	6.07	.97	

Table 114. Comparison of mean sociometric scores of school dropouts and non-dropout controls matched on IQ and socio-economic status.

		Dropouts			Non-Dropouts			
Variable	Sample	N	Mean	S.D.	N	Mean	S.D.	Critical Ratio (one-tail test)
LM	Boys	57	4.54	.70	57	4.99	.99	2.82, $p < .01$
	Girls	45	4.61	.92	45	4.86	.80	1.40 ns
	Total	102	4.57	.81	102	4.93	.91	3.03, $p < .01$
LL	Boys	57	4.45	1.14	57	4.72	1.17	1.24 ns
	Girls	45	4.59	1.30	45	4.92	1.06	1.31 ns
	Total	102	4.51	1.21	102	4.80	1.13	1.80, $p < .05$
LD	Boys	57	4.42	.91	57	4.86	1.05	2.37, $p < .01$
	Girls	45	4.52	1.13	45	4.86	.91	1.58 ns
	Total	102	4.46	1.01	102	4.86	.99	2.81, $p < .01$
TR	Boys	55	4.57	1.01	57	4.97	.68	2.48, $p < .01$
	Girls	44	4.65	.54	45	4.80	.74	1.04 ns
	Total	99	4.61	.83	102	4.89	.71	2.75, $p < .01$
IQ	Boys	57	85.4	13.21	57	85.9	13.06	
	Girls	45	87.4	11.47	45	87.1	11.13	
	Total	102	86.3	12.51	102	86.5	12.32	
SES	Boys	57	6.12	.99	57	6.12	.99	
	Girls	45	6.02	.91	45	6.02	.91	
	Total	102	6.08	.96	102	6.08	.96	

rejection accounts for variance associated with dropping out of school that is independent of intelligence and SES. While the results were more substantial for boys than for girls, the results for girls are in the same direction, and all indications are that they would hold in larger samples. The implications are that further, large-scale followup studies of the relation of peer acceptance-rejection to dropping out of school, involving longer elapsed time between the initial peer survey data and time of dropout, would yield even more fruitful results.

APPENDICES TO CHAPTER V

TEXAS CHRISTIAN UNIVERSITY
INSTITUTE OF BEHAVIORAL RESEARCH
PEER RELATIONS STUDY

REPORT OF SCHOOL DROPOUT

1. Name ____________________ ______________________________
Last First

2. ID ____

3. Father's Occupation ______________________________

4. Mother's Occupation ______________________________

5. Most recent IQ score ___________

Name of test given ____________________ Form __________

6. Reason for leaving schoo, if known ____________________

____

____

____

7. Was this pupil failing in school at the time he dropped out? Yes ____ No ____

8. Comments ____

____

____

____

____

TEXAS SCHOOL LAW*

COMPULSORY EDUCATION

Article 2892. "Attendance Requirements.--Every child in the State who is seven years and not more than sixteen years of age shall be required to attend the public school in the district of its residence, or in some other district to which it may be transferred as provided by law, for a period of not less than one hundred and twenty days. The period of compulsory school attendance at each school shall begin at the opening of the school term unless otherwise authorized by the district school trustees and notice given by the trustees prior to the beginning of such school term; provded that no child shall be required to attend school for a longer period than the maximum term of the public school in the district where such child resides."

Article 2893. "Exemptions.--The following classes of children are exempt from the requirements of this law:

1. Any child in attendance upon a private or parochial school which shall include in its course a study of good citizenship, and shall make the English language the basis of instruction in all subjects.

2. Any child whose bodily or mental condition is such as to render attendance inadvisable, and who holds definite certificate of a reputable physician specifying this condition and covering the period of absence.

3. Any child who is blind, deaf, dumb or feebleminded, for the instruction of whom no adequate provision has been made by the school district.

4. Any child living more than two and one'half miles by direct and traveled road from the nearest public school supported for the children of the same race and color of such child and with no free transportation provided.

5. Any child more than sixteen (16) years of age who has satisfactorily completed the work of the ninth grade, and whose services are needed in support of a parent or

other person standing in parental relation to the child, may, on presentation of proper evidence to the county superintendent, be exempted from further attendance at school."

Article 2894. "Excuses for absences.--Any child not so exempt may be excused for temporary absence due to personal sickness, sickness or death in the family, quarantine, severe storm which has destroyed bridges and made the regular means of travel dangerous, or for unusual cause acceptable to the teacher, principal or superintendent of the school in which said child is enrolled; provided that the excuses are in writing and signed by the parent or guardian of said child. Any case so excused may be investigated by the authorities discharging the duties of attendance officer for the school from which said child is so excused."

Article 299. (P.C.) "Duties of parent or guardian.--If any parent or person standing in parental relation to a child within the compulsory school attendance ages who is not properly excused from attendance upon school for some exemption provided by law fails to require such child to attend school regularly for such period as is required by law, it shall be the duty of the attendance officer who has jurisdiction in the territory where said parent or person standing in parental relation resides, to warn such parents or person standing in parental relation that this law must be immediately complied with, and upon failure of said parent or person standing in parental relation to immediately comply with this law after such warning has been given, the official discharging the duties of the attendance officer shall forthwith file complaint against such parent or person standing in parental relation to said child, which complaint shall be filed in the county court or in the justice court in the precinct where such parent or guardian resides. Any parent or other person standing in parental relation upon conviction for failure to comply with the provisions of this law shall be fined for the first offense five dollars, and for the second offense ten dollars, and for each subsequent offense twenty-five dollars. Each day that said child remains out of said school after said warning has been given or after said child has been ordered in school by the juvenile court, may constitute a separate offense."

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*Hinsley, J. C., Handbook of Texas school law, Austin, Texas; Steck Co., 1958.

Article 300. (P.C.) "Habitual truant.--If any parent or person standing in parental relation to any child within the compulsory school attendance ages shall present proof that he or she is unable to compel said child to attend school, said person shall be exempt from the penalties provided in the preceding article as regards the non-attendance of such child, and such child may be proceeded against as an habitual truant and be subject to commitment to the State Juvenile Training School or any other suitable school agreed upon between such parent or guardian and the judge of the juvenile court."

CHAPTER VI.

DEVELOPMENTAL PROCESSES ASSOCIATED WITH PEER ACCEPTANCE-REJECTION

VI. DEVELOPMENTAL PROCESSES ASSOCIATED WITH PEER ACCEPTANCE-REJECTION

This chapter is a condensed summary of a study (Cox, 1966) entitled Family Background Effects on Personality Development and Social Acceptance which has appeared as a separate report of the general study. It was undertaken as an independent investigation within the general framework of the research program on peer relations and personality development described in this volume.

As discussed in preceding sections, Roff's followup studies of samples of boys in Minnesota (1956, 1957, 1960, 1961a, 1963a), focused attention on childhood peer status as a significant predictor of young adult adjustment level. These were followed by the present general study, which not only added new evidence concerning the relations of peer acceptance-rejection to criteria of early delinquency and school dropout, but also obtained converging new results from several approaches that implicated family influence as a significant source of variance in peer acceptance-rejection. However, even in the face of these significant results, it is apparent that the specific factors that mediate peer acceptance-rejection are still only vaguely understood.

The study reported here represents an attempt to bring certain of the more salient of these factors into sharper focus. Although the range and number of relevant biological, cultural, familial, and social factors are recognized to be extensive, those selected for careful study in this investigation are of particular interest because of their relation to significant past research and because they appear to represent pivotal aspects of several related classes of variables that together form a conceptually related network of relationships.

Such a network was hypothesized among four sets of variables, as follows: (1) family background and social factors, which reflect socioeconomic and educational level of parents and hence the level of ease, comfort, enlightenment, and perhaps goals for the children of the family, (2) parental child-rearing attitudes and practices, which were assumed to be diagnostic of the relations between parents and children, and therefore to influence the personality development of the children, (3) self-concept, intelligence, and other personality and behavioral characteristics of the child, which were believed to be focal in peer relations, and (4) peer acceptance-rejection. In order to investigate relationships among these broad sets of factors, a number of strategic variables was selected to represent each major source of variance. As a result, some of the main lines of influence can be described, but, in view of the selectivity imposed, it was expected that these would account for only a modest percentage of the total variance of the developmental processes under examination.

PREVIOUS RESEARCH

Several of the linkages in the hypothesized network of relationships have received extensive empirical attention while others appear to have been largely ignored at the empirical attention while others appear to have been largely ignored at the empirical level, although mentioned in theoretical formulation. The relevant literature has been reviewed at length by Cox (1966). Briefly, reports of empirical research concerning these four categories of variables indicated that:

(1) Social (socioeconomic and educational) level of the family has been related to variables in each of the domains set forth above. The research, emphasizing the generally favorable effects of high SES and educational level, has been extensive and the results appear to be remarkably consistent.

(2) Parental attitudes and child-rearing practices (involving concepts such as loving vs rejecting, casual vs demanding, and overt concern) have been found to be related to children's personalities, behavior patterns, and adjustment. The research in this area has been less extensive,

and the results appear more difficult to generalize. In general, loving and casual attitudes of parents have been associated with what is commonly recognized as favorably adjusted child personality patterns.

(3) Despite extensive investigation of relations between children's personality, behavior patterns, and adjustment, and a number of sociometric choice patterns, the empirical results are equivocal and the relations of various measures of personality and adjustment to peer acceptance-rejection are by no means clear.

SAMPLE

Fifty high and fifty low peer status children who had participated in this general study in the Castleberry (Texas) School District for three years and their families constituted the sample for this intensive study. Selection was based on the DT score in the third year. The DT score was used for this purpose in view of its year-to-year stability as shown by correlations between yearly measures exceeding .70. Following a convention established in other studies presented earlier, the limits of + and - one standard deviation from the mean were used as criteria for identifying high and low pupils. The reference means and standard deviations were those of the respective class-groups of the children in the sample.

Seven hundred children in the Castleberry school district had participated in the Peer Relations Study for three years when this study was begun. Of 700, 134 (67 high and 67 low) were available for this research, and the sample of 50 high and 50 low was drawn from these. After extensive negotiations with school officials and parent groups, the parents of the 134 children were requested to participate in this research, and exactly 100 families agreed to cooperate.

During an introductory interview, the nature of the study was explained to the parents, and they were advised in detail concerning the types of information and amounts of time that would be required to complete various tests, forms, and questionnaires. A statement of voluntary participation and written authority to permit testing of their child was obtained from the parents of each family. The announced plan, which was followed quite closely, involved one home visit, two testing sessions for both parents, and testing of the children during free time at school by professionally qualified personnel.

Despite heroic efforts by Dr. Cox and the staff, the data gathered were not complete in accordance with the schedules established. The incomplete data are accounted for in three broad categories: (1) some parents were not available in the home because of divorce or separation; (2) some families moved after completing part of the questionnaires; and (3) some fathers refused to complete the forms, although their wives were cooperating.

DATA COLLECTION

The total data collection schedule produced items of information concerning home, parents, and child, that were represented by 175 discrete variables. These are not enumerated here but can be found in the original report (Cox, 1966). However, since the number of variables included exceeded the size of the sample, and also because many of these were highly interrelated, a strategy was devised for data reduction prior to analysis. Several methods were employed, depending on the nature of the data, to develop pooled, composite or factor scores that represented the original battery without substantial loss of meaning. The final, reduced battery consisted of 29 measures which represent 12 significant concepts, as explained below. In order to avoid contamination, the measures in each conceptual set were developed before examining relationships across any of the sets. The relations among the four basic categories or sets of variables, the 12 conceptual variables representing them, and the 29 measures developed by empirical analysis, are explained in the following enumeration. To facilitate comprehension of relations among sets, general variables, and specific variables, a numbering system has been adopted in which the sets are designated as hundred, general variables as tens, and specific variables as units.

Set	General Variable	Specific Variables
100. Family Background	110. Social Level (sum of standard scores of 111, 112, 113)	111. Family Economic Level
		112. Years of Education-Father
		113. Years of Education-Mother
	120. Family Tension	121. Tension Index, an unweighted composite of 17 items judged to be symptomatic of tensions that produce family stress
200. Parents' Child-Rearing Attitudes and Practices. Concepts and measures adopted from Roe and Siegelman (1963)	210. Loving-Rejecting (L-R)	Five measures based on summed standard scores for three Roe-Siegelman scales (Loving, Rejecting, Neglecting)
		211. Father-L-R score rating by child (C/F)
		212. Mother-L-R score rating by child (C/M)
		213. Mother-L-R score self rating (M/C)
		214. Father-L-R score self rating (F/C)
		215. Consensual L-R score, common factor

Set	General Variable	Specific Variables
	220. Casual-Demanding (C-D)	Five measures based on summed standard scores for four Roe-Siegelman scales (Casual, Demanding, Symbolic-Love Punishment, and Direct-Object Punishment)
		221. Father-C-D score rating by child (C/F)
		222. Mother-C-D score raing by child (C/M)
		223. Mother-C-D score self rating (M/C)
		224. Father-C-D score self rating (F/C)
		225. Consensual C-D score, common factor
	230. Overt Concern for the child (O)	Four measures based on summed standard scores for three Roe-Siegelman scores (Protecting, Symbolic-Love Reward, Direct-Object Reward)
		231. Father-O score, rating by child (C/F)
		232. Mother-O score, rating by child (C/M)
		233. Mother-O score, self rating (M/C)
		234. Father-O score, self rating (F/C)

Set	General Variable	Specific Variables
	240. Parental Disagreement	Two measures based on the difference between 211 and 212 (Loving-Rejecting) and between 221 and 222 (Casual-Demanding)
		241. Parental Disagreement (L-R)
		242. Parental Disagreement (C-D)
300. Characteristics of the Child	310. Intelligence	311. The mean total scale IQ for two administrations of the *California Test of Mental Maturity*
	320. Ego Development	321. Self-Concept; the total score of the *How I Feel About Myself* (Piers and Harris, 1963)
		322. Child's Problems the number of big problems reported by each child on the *SRA Junior Inventory*
	330. Health Problems	331. Health Index; an unweighted composite of 27 items reported by the mother on the child's Medical History, an adaptation of the form used in the National Health survey; and 6 items reported by school personnel.

Set	General Variable	Specific Variables
	340. Trait Pattern A Socially effective behavior	341. Positive Trait Pattern A (TR), a factor score based on teacher ratings on five bipolar traits, Cattell (1963); the positive poles were: Non-Aggressive, kind, considerate; conscientious, trustworthy; adaptable, flexible; trustful of others; cooperative, compliant obedient
		342. Negative Trait Pattern A (Peer Nom.) a factor score based on Bower's (1960) *Class Play*, using nominations by peers: someone who gets angry at little things and gets into many fights; bully who picks on smaller, weaker children; person with a very bad temper; someone who is almost as stubborn as a mule
	350. Trait Pattern B Superego strength	351. Positive Trait Pattern B (TR) a factor score based on four bipolar Cattell traits, with positive poles defined by: careful with property of others; neat, tidy, orderly; persevering, determined; responsible

Set	General Variables	Specific Variables
		352. Negative Trait Pattern B (Peer Nom.) a Class Play factor score using nominations of peers on: a hermit who doesn't like to be with people; a neighbor who is careless with others property; the laziest person in the world; a character who is a sloppy dresser or very careless about how he or she looks; and a suspicious character who is not trusted by the others
400. Peer Acceptance-Rejection Status	410. Acceptance-Rejction	411. LD-four year Average score

ANALYTIC PROCEDURE

Inasmuch as complete data were available for only 75 families, and data for mother and child for 97 of the 100 families, analyses were made for these two samples. The missing fathers were in most cases from the low-SES, poorly adjusted part of the sample. As a result, the elimination of the 25 families related to them had the effect of underestimating many of the relationships studied.

Correlational analysis was used primarily. After computing two basic zero-order correlation matrices for variables selected to represent the four data-sets, variance reduction methods following DuBois (1957) were used to compute multiple and multiple partial correlations to examine in detail the relationships among strategic variables in the hypothetical network. In order to assess the cumulative proportions of common variance among the sequentially ordered sets of variables, the variables in each of the four successive sets were grouped, when used as predictors in the multiple correlations. The multiple partial correlations were used to analyze the unique variances associated with particular sets of predictors. The results are presented in Tables 115 through 123, which are explained below.

Tables 115 and 116 present the zero-order correlations for the 75-family and 97-family samples, respectively. Table 115 includes 14 variables from the four basic sets for the 75 families in which data for fathers were available. These represent the most general summary variables of each set and include measures of father child-rearing attitudes in the composite variables of set 200, thus representing the total parental influence. A more detailed analysis was included in Cox's study. Table 116 includes 22 variables from the four sets for the 97 families in which data for mothers and children were available. To facilitate the identification of variables in Set 200, some of the component scores included in the summary variables in Table 115 are included separately. These reflect different frames of reference for the LR, CD, and O variables, as explained

Table 115. Intercorrelations of 14 variables from the four basic sets for 75 families in which data for fathers were available.

Measure	110	120	215	225	233	234	241	242	311	321	331	341	351
100. Family Background													
110. Social Level													
120. Family Tension	-.47**												
200. Child-Rearing Practices													
215. Consensual (L-R)	.23*	-.31**											
225. Consensual (C-D)	.21	-.11	.54**										
233. Mother O score, self-rating	-.28*	.28*	-.25*	-.32**									
234. Father O score, self-rating	-.04	.15	-.21	-.12	.43**								
241. Parental Disagreement (L-R)	-.30**	.37**	-.34**	-.12	-.01	-.04							
242. Parental Disagreement (C-D)	-.26*	.41**	-.36**	-.04	-.07	.01	.44**						
300. Child's Characteristics													
311. IQ	.53**	-.38**	.35**	.29**	-.06	-.16	-.21	-.30**					
321. Self-Concept	.33**	-.35**	.52**	.36**	-.14	-.13	-.28*	-.28*	.44**				
331. Health Index	-.31**	.45**	-.53**	-.32**	.20	.06	.40**	.27*	-.28*	-.41**			
341. Positive Trait Pattern A (TR)	.28*	-.33**	.33**	.26*	-.15	-.25*	-.12	-.23*	.41**	.39**	-.30**		
351. Positive Trait Pattern B (TR)	.30**	-.31**	.40**	.29**	-.15	-.10	-.23*	-.29**	.37**	.35**	-.42**	.72**	
400. Peer Acceptance-Rejection													
411. LD	.26*	-.44**	.48**	.29**	-.12	-.07	-.26*	-.31**	.53**	.62**	-.50**	.57**	.48**

Decimals omitted; *p < .05; **p < .01

Table 116. Intercorrelations of 22 variables from the four basic sets for 97 families in which data for mothers and children were available.

Measure	110	120	211	212	213	221	222	223	231	232	233	241	242	311	321	322	331	341	351	342	352
100. Family Background																					
110. Social Level																					
120. Family Tension	-.47**																				
200. Child-Rearing Practices																					
211. Loving-Rejecting C/F	.24*	-.26**																			
212. Loving-Rejecting C/M	.36**	-.23*	.73**																		
213. Loving-Rejecting M/C	.37**	-.27**	.26**	.24*																	
221. Casual-Demanding C/F	.13	-.15	.39**	.28**	.26**																
222. Casual-Demanding C/M	.15	-.11	.41**	.40**	.10	.71**															
223. Casual-Demanding M/C	.30**	-.16	.28**	.36**	.27**	.29**	.33**														
231. Father O score C/F	-.06	-.05	.41**	.25*	-.11	-.13	-.06	.03													
232. Mother O score C/M	.06	-.04	.29**	.32**	-.10	-.18	-.10	.20*	.72**												
233. Mother O score M/C	-.13	.19	-.12	-.17	-.13	-.14	-.07	-.44**	.00	.03											
241. Parental Disagreement (L-R)	-.25*	.32**	-.37**	-.16	-.10	-.13	-.08	.06	-.37**	-.13	.02										
242. Parental Disagreement (C-D)	-.21*	.32**	-.30**	-.21*	00	-.08	-.09	.04	-.21*	-.02	-.03	.40**									
300. Child's Characteristics																					
311. IQ	.48**	-.35**	.42**	.41**	.21*	.08	.08	.14	.12	.12	-.02	-.17	-.25*								
321. Self-Concept	.31*	-.26**	.56**	.56**	.21*	.22*	.32**	.20*	.17	.07	-.09	-.24*	-.24*	.48**							
322. Child's Problems	-.26**	.18	-.47**	-.46**	-.19	-.28**	-.25*	.14	-.17	-.11	.18	.26**	.28**	-.42**	-.64**						
331. Health Index	-.31**	.39**	-.53**	-.40**	-.29**	-.25*	-.23*	-.18	-.12	-.05	.19	.33**	.27**	-.35**	-.48**	.51**					
341. Positive Trait Pattern A (TR)	.24*	-.31**	.32**	.33**	.36**	.23*	.19	.26**	.00	.06	-.21*	-.13	-.18	.35**	.43**	-.39**	-.36**				
351. Positive Trait Pattern B (TR)	.26**	-.34**	.40**	.38**	.32**	.24*	.25*	.23*	.07	.08	-.20*	-.19	-.17	.38**	.40**	-.35**	-.43**	.73**			
342. Negative Pattern A (Peer)	-.13	.25*	-.09	-.23*	.07	-.06	-.13	-.17	.11	-.01	.21*	.13	00	-.24*	-.31**	.38**	.18	-.33**	-.15		
352. Negative Pattern B (Peer)	-.27**	.34**	-.35**	-.33**	-.28**	-.23*	-.25*	-.21*	-.07	.01	.20*	.18	.06	-.44**	-.52**	.47**	.52**	-.55**	-.67**	.21*	
400. Peer Acceptance-Rejection																					
411. LD	.27**	-.47**	.54**	.38**	.27**	.25*	.25*	.17	.22*	.13	-.06	-.26**	-.24*	.54**	.61**	-.49**	-.53**	.56**	.54**	-.23*	-.64**

Decimals omitted; *p < .05; **p < .01.

earlier. They are identified as follows: Father rated by child (C/F); Mother rated by child (C/M); Father's self rating (F/C); and Mother's self rating (M/C).

Table 117 presents the multiple correlations among successive sets in the matrix, for the 75 family sample. Seven combinations of variables from the first three sets were used as predictors, with variables in Set 400 and the other sets (when not used as predictors) as criteria. The multiple correlation coefficients are identified in the first column. To save space, the subscripts of the first and last predictor variables listed in sequential order are indicated in the parentheses.

Table 118 reports a proportional analysis of the predicted variance for each of six criteria (five variables from Set 300, Characteristics of the Child, and variable 411, LD. Multiple partial correlations were computed in order to estimate the proportion of predicted criterion variance (in Sets 500 and 400) with the effects of other predictors (in Sets 100 and 200) removed.

Table 119 includes both a multiple and a multiple partial correlation analysis of the variance predicted in LD, and provides a comparison between the 75 family and 97 family samples for similar relationships. Only the 11 variables which were significantly correlated with LD in the 75 Family Sample (Table 115) were used for the 75 Family

Table 117. Multiple correlation analysis by successive levels of the matrix; 12 selected variables; 75 family sample.

Identification of Correlation Coefficient	Successive Criteria	Sets of Predictor Variables	Multiple Correlation*	Per cent of Variance
$R_{215}(110,120)$	215. Loving-Rejecting	110. Social Level	.32	10.4
$R_{225}(110,120)$	225. Casual-Demanding	120. Family Tension	.21*	4.6
$R_{241}(110,120)$	241. Parental Disagreement (L-R)		.24*	6.0
$R_{242}(110,120)$	242. Parental Disagreement (C-D)		.42	17.3
$R_{311}(110,120)$	311. IQ		.55	30.0
$R_{321}(110,120)$	321. Self-Concept		.40	16.0
$R_{331}(110,120)$	331. Health Index		.47	21.6
$R_{341}(110,120)$	341. Pattern A (TR)		.36	12.9
$R_{351}(110,120)$	351. Pattern B (TR)		.35	12.5
$R_{411}(110,120)$	411. LD		.44	19.7
$R_{110}(215...251)$	110. Social Level	215. Loving-Rejecting	.38	14.3
$R_{120}(215...251)$	120. Family Tension	225. Casual-Demanding	.48	22.8
$R_{311}(215...251)$	311. IQ	241. Parental Disagreement (L-R)	.41	16.8
$R_{321}(215...251)$	321. Self-Concept	251. Parental Disagreement (C-D)	.55	29.9
$R_{331}(215...251)$	331. Health Index		.58	34.0
$R_{341}(215...251)$	341. Pattern A (TR)		.37	13.7
$R_{351}(215...251)$	351. Pattern B (TR)		.45	19.9
$R_{411}(215...251)$	411. LD		.51	25.8
$R_{110}(311...351)$	110. Social Level	311. IQ	.56	31.0
$R_{120}(311...351)$	120. Family Tension	321. Self-Concept	.54	29.6
$R_{215}(311...351)$	215. Loving-Rejecting	331. Health Index	.64	41.1
$R_{225}(311...351)$	225. Casual-Demanding	341. Pattern A (TR)	.45	20.4
$R_{241}(311...351)$	241. Parental Disagreement (L-R)	351. Pattern B (TR)	.43	18.9
$R_{251}(311...351)$	251. Parental Disagreement (C-D)		.39	15.5
$R_{411}(311...351)$	411. LD		.77	59.7
$R_{311}(110...251)$	311. IQ	110. Social Level	.61	37.6
$R_{321}(110...251)$	321. Self-Concept	120. Family Tension	.58	34.2
$R_{331}(110...251)$	331. Health Index	215. Loving-Rejecting	.64	40.2
$R_{341}(110...251)$	341. Pattern A (TR)	225. Casual-Demanding	.45	19.9
$R_{351}(110...251)$	351. Pattern B (TR)	241. Parental Disagreement (L-R)	.48	23.4
$R_{411}(110...251)$	411. LD	251. Parental Disagreement (C-D)	.57	33.1
$R_{215}(110...352)$	215. Loving-Rejecting	110. Social Level	.64	41.4
$R_{225}(110...352)$	225. Casual-Demanding	120. Family Tension	.46	21.5
$R_{241}(110...352)$	241. Parental Disagreement (L-R)	311. IQ	.46	21.2
$R_{251}(110...352)$	251. Parental Disagreement (C-D)	321. Self-Concept	.40	15.9
$R_{411}(110...352)$	411. LD	331. Health Index	.79	62.2
		341. Pattern A (TR)		
		352. Pattern B (TR)		
$R_{110}(215...351)$	110. Social Level	215. Loving-Rejecting	.60	36.2
$R_{120}(215...351)$	120. Family Tension	225. Casual-Demanding	.60	36.2
$R_{411}(215...351)$	411. LD	241. Parental Disagreement (L-R)	.77	59.9
		251. Parental Disagreement (C-D)		
		311. IQ		
		321. Self-Concept		
		331. Health Index		
		341. Pattern A (TR)		
		351. Pattern B (TR)		
$R_{411}(110...351)$	411. LD	110. Social Level	.79	62.4
		120. Family Tension		
		215. Loving-Rejecting		
		225. Casual-Demanding		
		241. Parental Disagreement (L-R)		
		251. Parental Disagreement (C-D)		
		311. IQ		
		321. Self-Concept		
		331. Health Index		
		341. Pattern A (TR)		
		351. Pattern B (TR)		

*All R's except $R_{225}(110,120)$, and $R_{241}(110,120)$ are significantly greater than zero, $p<.05$.

Table 118. Analysis of proportions of variance in five child characteristics and in peer acceptance-rejection, predicted by sets* of family and parent variables; 75 family sample.

Criterion Variable	Criterion Variance Predicted by Sets 100 and 200	Variance Uniquely Predicted by		Variance Common to Sets 100 and 200
		Set 100 (Family Background)	Set 200 (Parent Child Relations)	
311. IQ	.3755 (100%)	.2495 (66%)	.1082 (29%)	.0176 (5%)
321. Self-Concept	.3419 (100%)	.0610 (18%)	.2167 (63%)	.0642 (19%)
331. Health Index	.4055 (100%)	.0998 (25%)	.2414 (59%)	.0643 (16%)
341. Pattern A (TR)	.1994 (100%)	.0724 (36%)	.0811 (41%)	.0459 (23%)
351. Pattern B (TR)	.2338 (100%)	.0431 (18%)	.1244 (53%)	.0663 (28%)
411. LD	.3305 (100%)	.0979 (30%)	.1669 (50%)	.0657 (20%)

*Predictor Sets

100. Family Background: 110. Social Level, 120. Family Tension

200. Parent Child-Rearing Practices: 215. Loving-Rejecting, 225. Casual-Demanding; 241. Parental Disagreement (L-R); 422. Parental Disagreement (C-D)

Table 119. Multiple and multiple partial correlation analysis showing proportions of variance in LD predicted by different combinations of predictors.

	Complete Family Sample (N = 75)				Mother-Child Sample (N = 97)			
Predictor[a] Sets	Number of Independent Variables	Multiple Correlation R	Per cent of Common Variance R^2	Per cent[b] of Total Predictable Variance	Number of Independent Variables	Multiple Correlation R	Per cent of Common Variance R^2	Per cent[b] of Total Predictable Variance
Multiple Correlation Analysis:								
100	2	.44	.20	32	2	.48	.23	33
200	4	.51	.26	41	11	.56	.32	46
300	5	.77	.60	94	6	.77	.60	88
100 + 200	6	.57	.33	53	13	.65	.42	61
100 + 300	7	.79	.62	99.7	8	.80	.64	94
200 + 300	9	.77	.60	96	17	.81	.65	96
100 + 200 + 300	11	.79	.62	100	19	.83	.68	100

Multiple Partial Correlation Analysis:

Predictor Sets	Multiple Partial Correlation	Partial Variance	Per cent[b] of Total Predictable Variance	Multiple Partial Correlation	Partial Variance	Per cent[b] of Total Predictable Variance
$R_{(411.200)(100.200)}$	.31	.10	16	.38	.15	21
$R_{(411.300)(100.300)}$	.25	.06	10	.33	.11	16
$R_{(411.200,300)(100.200,300)}$	.25	.06	10	.30	.09	13
$R_{(411.300)(100.300,200.300)}$	.26	.07	11	.45	.21	30
$R_{(411.200)(100.200,300.200)}$	.70	.49	79	.73	.53	78
$R_{(411.100)(200.100)}$	.41	.17	27	.50	.25	36
$R_{(411.300)(200.300)}$	.06	.01	07	.36	.13	19
$R_{(411.100,300)(200.100,300)}$	.06	.01	06	.33	.11	16
$R_{(411.100)(200.100,300.100)}$	.73	.53	85	.77	.59	86
$R_{(411.100)(300.100)}$	.73	.53	85	.73	.54	80
$R_{(411.200)(300.200)}$	.68	.46	74	.70	.49	72
$R_{(411.100,200)(300.100,200)}$	.66	.44	70	.67	.45	67

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[a] Variables included at each level are listed in text; number of variables include the criterion.

[b] Indicates per cent of criterion variance predicted by Sets 100, 200, and 300.

Sample in this analysis. The two excluded variables (233, 234) might have been used as suppressors in order to inflate the multiple correlation, but were excluded in order to reduce the number of predictors in this rather small sample.

Nineteen of the 21 predictors used for the 97 Family Sample (Table 116) were included for this sample in the multiple correlational analysis reported in Table 119. Two variables (342, 352) were excluded in the original study for reasons that follow and could not be included here. In the Cox study, they were included in separate analyses of the Class Play, the items of which, based on peer nominations, were highly related to the peer choice scores.

Table 120 evaluates the significance of increments to multiple correlations in which variables from Sets 300 and 400 are dependent and variables from Sets 100 and 200 are independent, when additional predictors are included.

Table 121 compares the correlations of measures of Loving-Rejecting from different frames of reference with each variable in the other three sets. Similar comparisons are provided for Casual-Demanding, in Table 122, and for Overt Concern for the child, in Table 123.

RESULTS

Correlation Matrices

The 75 Family Sample. Table 115 presents the intercorrelations of 14 variables, representing the four conceptual

Table 120. Significance tests of increments to multiple correlation coefficients when additional predictors are included.

Initial Multiple Correlation			Incremental Multiple Correlation			
Predictor Set	R	Number of independent predictor variables	Predictor Set	R	Number of additional independent predictor variables	F Test of Significance
			Complete Family Sample (N = 75)			
100	.44	2	100,200	.57	4	3.35*
			100,300	.79	5	16.09**
			All	.79	9	7.82**
200	.51	4	100,200	.57	2	3.68*
			200,300	.77	5	11.05**
			All	.79	7	8.62**
300	.77	5	100,300	.79	2	2.17
			200,300	.77	4	.03
			All	.79	6	.72
100,200	.57	6	All	.79	5	9.67**
100,300	.79	7	All	.79	4	.92
200,300	.77	9	All	.79	2	2.07
			Mother-Child Sample (N = 97)			
100	.48	2	100,200	.65	11	2.42*
			100,300	.80	6	25.94**
			All	.83	17	6.39**
200	.56	11	100,200	.65	2	6.99**
			200,300	.81	6	12.46**
			All	.83	8	10.89**
300	.77	6	100,300	.80	2	5.31**
			200,300	.81	11	1.05
			All	.83	13	1.51
100,200	.65	13	All	.83	6	4.40**
100,300	.80	8	All	.83	11	.80
200,300	.81	17	All	.83	2	3.65*

*$p < .05$; **$p < .01$.

Table 121. Correlations of measures of loving-rejecting, representing six different frames of reference, with selected variables in other sets. (N = 75)

	Loving-Rejecting Scores, Six Frames of Reference					
Independent Variables	Consensual (215)	Father Rating by Child (211)	Mother Rating by Child (212)	Father Self-Rating (214)	Mother Self-Rating (213)	Parental Disagreement (241)
100. Family Background						
110. Social Level	.23*	.20	.27**	.19	.36**	-.30**
120. Family Tension	-.31**	-.26**	-.17	-.30**	-.23*	.37**
300. Characteristics of the Child						
311. IQ	.35**	.33**	.30**	.19	.29**	-.21
321. Self-Concept	.52**	.53**	.53**	.13	.22*	-.28**
331. Health Index	-.53**	-.48**	-.33*	-.35**	-.35**	.40**
322. Child's Problems	-.45**	-.44**	-.35**	-.17	-.25*	.42**
341. Pattern A (TR)	.33**	.27**	.29**	.27**	.39**	-.12
351. Pattern B (TR)	.40**	.38**	.34**	.21	.30**	-.23*
342. Pattern A (Peer)	-.07	-.07	-.14	-.15	.11	.07
352. Pattern B (Peer)	-.41**	-.37**	-.32**	-.32**	-.30**	.32**
400. Peer Acceptance-Rejection						
411. LD	.48**	.43**	.32**	.39**	.24*	-.26*

*p<.05; **p<.01.

Table 122. Correlations of measures of casual-demanding, representing six different frames of reference with selected variables in other sets. (N = 75)

Independent Variables	Casual-Demanding, Six Frames of Reference					
	Con-sensual (225)	Father Rating by Child (221)	Mother Rating by Child (222)	Father Self-Rating (224)	Mother Self-Rating (223)	Parental Disagree-ment (242)
100. Family Background						
110. Social Level	.21	.14	.18	.20	.26*	-.26*
120. Family Tension	-.11	-.09	-.05	-.22*	00	.41**
300. Characteristics of the Child						
311. IQ	.29**	.22*	.26*	.27*	.11	-.30**
321. Self-Concept	.36**	.27*	.39**	.25*	.19	-.28*
331. Health Index	-.32**	-.30**	-.37**	-.32*	-.17	.27*
322. Child's Problems	-.39**	-.30**	-.37**	-.32**	-.17	.26*
341. Pattern A (TR)	.26*	.25*	.16	.25*	.07	-.23*
351. Pattern B (TR)	.29**	.23*	.24*	.29**	.10	-.29**
342. Pattern A (Peer)	-.11	-.07	-.17	-.01	-.07	-.02
352. Pattern B (Peer)	-.32**	-.24*	-.29**	-.34**	-.08	.24*
400. Peer Acceptance-Rejection						
411. LD	.29**	.22*	.26*	.27*	.11	-.31**

*p<.05; **p<.01.

Table 123. Correlation of measures of overt concern, representing four different frames of reference, with selected variables in other sets. (N = 75)

Independent Variables	Overt Concern Scores, Four Frames of Reference Father Rating by Child (231)	 Mother Rating by Child (232)	 Father Self-Rating (234)	 Mother Self-Rating (233)
100. Family Background				
110. Social Level	-.05	-.01	-.04	-.28*
120. Family Tension	-.05	.04	.15	.28*
300. Characteristics of the Child				
311. IQ	.06	.05	-.16	-.06
321. Self-Concept	.11	-.03	-.13	-.14
331. Health Problems	-.04	.08	.06	.20
332. Childs Problems	-.15	-.03	.15	.29**
341. Pattern A (TR)	-.05	-.03	-.25*	-.15
351. Pattern B (TR)	.04	.03	-.10	-.15
342. Pattern A (Peer)	.20	.08	.09	.11
352. Pattern B (Peer)	-.08	.05	.18	.27*
400. Peer Acceptance-Rejection				
411. LD	.15	.01	-.07	-.12

*p<.05; **p<.01.

sets described above, for the 75 complete-data families. Of the 91 correlation coefficients in this matrix, 66 were significantly greater than zero ($p < .05$) and in the direction expected according to hypothesized relationships, as set forth in detail by Cox (1966). Of the 25 non-significant coefficients, 19 involved the two measures of Overt Concern (Roe's factor O) which apparently failed to perform as expected; 4 involved Consensual Casual-Demanding, and 2 involved Parental Disagreement (L-R). If the two measures of Overt Concern had been omitted, the yield of significant correlation coefficients in Table 115 would have been 60 out of 66.

The 97 Family Sample. Table 116 presents the intercorrelations for 22 measures, arranged by sets, for the mothers and children in the 97 family sample. Of the 231 correlation coefficients in the matrix, 144 were significantly greater than zero in the expected direction. Forty-seven of the 87 non-significant correlations involved three measures of Overt Concern. If these three measures had been omitted, the yield of significant correlation coefficients would have been 129 out of 171.

Multiple Correlational Analyses

Variance reduction methods (DuBois, 1957) were used to compute multiple and multiple partial correlations to examine in more detail the relationships among strategic variables in the hypothetical network. Separate analyses were made for the sample of 75 complete families and for the sample of 97 families.

In order to assess the cumulative proportions of common variance among the sequentially ordered sets of variables, the variables in each of the four successive sets were grouped when used as predictors in the multiple correlations.

The cumulative multiple correlation analysis in Table 117, with two exceptions, shows that each set of variables in column 3 is significantly related to the variables in each other set and that the network of hypothesized relationships is supported strongly by the level and sign of the correlation coefficients obtained. When LD is the dependent variable and the other variables together are independent, R is .79, which denotes 62.4 per cent of common variance. The data in Table 117, based on the 75 family sample, show that the R's for Sets 100, 200 and 300, separately, with LD are .44, .51, and .77 (accounting for 19.7, 25.8, and 59.7 per cent of common variance), respectively. It appears that Set 300, consisting of five child characteristics, is most highly correlated with LD but that 100, Family Background, and 200, Parental Attitudes, contribute significantly to the Characteristics of the Child as well as making a direct incremental contribution to LD. These relationships are also supported by Tables 118 and 119.

Table 120 presents the results in another way, showing significance tests of increments to multiple correlation coefficients, with LD as dependent variable, when predictors are added, beginning initially with each of the three independent sets. This table includes data for both the 75 family and 97 family samples. Here again, the greatest increment results from the addition of Set 300, although the other two sets do account for significant increments in most of the sequences analyzed.

Tables 121 and 122 summarize correlations of scores representing the six frames of reference for parental attitudes with the variables of Sets 100, 300, and 400 for Loving-Rejecting and Casual-Demanding, respectively, and Table 123 is similar for Overt Concern, but includes only four of the six attitude scores. A measure of common variance among the first four scores for Overt Concern could not be extracted because of low intercorrelations. These tables, as the others, merit more detailed comment than can be included here. Of particular interest are the general consistency of sign across frames of reference and the generally high level of relationships of Loving-Rejecting and Casual-Demanding.

Comparison of specific relationships is tempting, but only a few can be mentioned. For Loving-Rejecting and Casual-Demanding, Tables 121 and 122 respectively, Social

Level is positively correlated with all attitude variables except Parental Disagreement, with which it is negatively related, while Family Tension is negatively related to all except Parental Disagreement, with which it is positively related. Seven measures of Characteristics of the Child, Set 300, were significantly correlated with Loving-Rejecting and Casual-Demanding scores in three frames of reference, Consensual, Father rated by Child, and Mother rated by Child, on all but one of the 42 coefficients involved in these comparisons. Some differences between patterns of correlations of Fathers' self-ratings and Mohters' self-ratings on Loving-Rejecting and on Casual-Demanding with measures from Set 300 were apparent. The Loving-Rejecting scores for Mother's self-report was significantly correlated with six of the eight child characteristics (Set 300), while the corresponding correlations for Father's self-report were significant in only three cases. A reversal of this pattern was found with respect to Casual-Demanding, where seven of the eight child variables were significantly associated with Father's self-report, but none were significant for the Mother's self-report. LD was significantly correlated with the six measures of Loving-Rejecting and with five of the six measures of Casual-Demanding, as shown in Tables 121 and 122.

As shown in Table 123, only 5 of 44 correlations of

Overt Concern, from four frames of reference, with 11 variables from Sets 100, 300, and 400 were significantly greater than zero. The scores on Overt Concern for Father's self-ratings and Mother's self-ratings were moderately correlated ($r = .43$), while the scores based on the children's ratings of fathers and of mothers were correlated substantially ($r = .70$). The correlations between the parents' self-reports and the children's ratings of them were about zero.

DISCUSSION

Family Background

Social Level. This measure, based on family income and parents' education, was expected to reflect the influence of socioeconomic status and education on (1) parental knowledge, skill, understanding, values, and acceptance of a responsible role in parenthood; and (2) factors which contribute to tension and conflict, such as deprivation, financial strain, overcrowding, and the like. The correlation results indicate that children of high social level families were at a marked advantage over those from low families. High social level was significantly correlated with: low family tension; loving rather than rejecting parental attitudes; casual rather than punishing or demanding mothers' attitudes, according to self-ratings, but not otherwise; agreement among parents in expressed child-rearing attitudes; and, in the children, high IQ, positive self-concept, absence of serious health problems, personality trait patterns (as rated by teachers) reflecting outgoing, friendly and considerate relations to others, and high superego strength, and high peer acceptance.

Family Tension. The scale developed to measure Family Tension included a number of objective items judged to be situationally diagnostic of stress and tension in the family. The results support this judgment and demonstrate it to be a sensitive and conceptually valid measure of tension. With only minor exceptions, the correlates of family tension were significant and conformed to theoretical expectations. As conceptualized, family tension was significantly related to social level, yet was independently associated with parent-child relations. This independent relation was tested by the part correlation between consensual loving-rejecting and family tension with social level removed ($r_{215(120.110)}$ = .22 $p < .05$). Examination of the correlates of family tension (Table 115 and 116) showed that this variable was strikingly related to measures of parental disagreement, and also to the child's self-concept, health problems, personality trait ratings, and peer status. In general, these data suggest that conditions and events which disrupt harmony in the family produce tension which manifests itself at every level in the matrix of relationships.

Parent Child-Rearing Practices and Attitudes

Loving-Rejecting. A pattern similarity analysis, reported by Cox (1966), strongly supported the definition of an attitude demension of loving-rejecting, which is stable across groups of differing age and sex. The correlation results with the measure of Loving-Rejecting, shown in Tables 115 and 116, indicated that it was the best single measure of the domain of parental attitudes investigated in this study.

Consensual loving-rejecting was significantly correlated with 12 of the 13 other variables in Table 115. A further comparison in Table 121, indicates that this is at least as suitable a measure of loving-rejecting as any of the remaining four, taken from the frame of reference of either the child or the parent. The construct of loving-rejecting, regardless of the mode of measurement, was markedly related to measures of personality and acceptance-rejection of the child. The self-reports of parents on loving-rejecting evidenced slightly lower correlations, probably as a result of the bias of selecting socially desirable responses (Cox, 1966).

Casual-Demanding. Intergroup comparisons of means on five measures of this variable by Cox showed that mothers, but not fathers, tended to prefer the more socially desirable response on scales of demanding and punishing. The absence of significant correlations of casual-demanding as measured by the mother's report (Table 122) tends to confirm this bias. With the exception of mothers' self-report on casual-demanding, the several measures of this dimension conform to the hypothesis that casual parental attitudes are associated with high social level, absence of tension in the family, healthy, self-satisfied, and outgoing child personalities, and peer acceptance.

Overt Concern. Analysis of the measures used for this factor indicated a marked absence of common variance between measurement modes involving parents and children. Parental responses were biased in the direction of social desirability on the protecting and rewarding scales, and a pattern similarity analysis indicated quite different structures for parents and for children. The intercorrelations of the scores confirmed a lack of relatedness between measures taken from the frame of reference of the child with those taken from the frame of reference of the parents.

Characteristics of the Child

A basic assumption of the theoretical formulations in this study was that peer acceptance-rejection is strongly dependent on the stimulus value of the child in peer society. The variables included as measures of child characteristics were assumed to represent major aspects of the individual to which peers respond. The theoretical expectation was that a comparatively large proportion of the variance in peer acceptance-rejection (LD) would be accounted for by these variables. The results give strong support to that expectation. However, the child's personality and peer acceptance-rejection status were also expected and found to be related to parental attitudes and child-rearing practices, and both were expected and found to be related to family background factors.

Intelligence. Intelligence is generally conceptualized as ability to solve complex problems, including problems of social, occupational, economic, and marital adjustment in real life situations. To a degree, social level reflects this intellectual capacity, especially in the father. It is not surprising, therefore, that the child's IQ is highly correlated with social level.

The moderate but significant pattern of correlations with parental child-rearing attitudes suggests that parents who are better educated and at higher social levels tend to have more intelligent children and to express more enlightened attitudes related to the rearing of their children than those at lower levels.

The multivariate analyses indicated that 30 per cent of the variance of IQ was predictable from the measures of social level and family tension, while only 16.8 per cent was predicted by four measures of parental child-rearing practices. In combination, these six variables predicted 37.6 per cent of the variance in IQ. Of the variance in IQ predictable from these two sets, 66 per cent was uniquely related to family background; 29 per cent was uniquely related to the four measures of child-rearing; and 5 per cent was shared by the two sets. These data throw light on the independent influences of family background and parental child-rearing attitudes on the intellectual development of the child.

Self-Concept. Theoretically, this concept has roots in parental attitudes of loving-rejecting, and the child's perception of parental behaviors should be expected to be one of its more relevant correlates. It can also be argued that, if the child's perception of a parent is one of rejecting then the veridical behavior of that parent may be of little consequence, if the perception is inaccurate or different from that of the parent. Veridical information was not available. However, the evidence supports the theoretical formulation to the extent that self-concept was significantly associated with the child's perception of each parent ($r = .56$, $p < .01$) as loving. Parental disagreement with respect to child-rearing practices of loving-rejecting was, as expected, significantly negatively associated with self-concept ($r = -.24$, $p < .05$).

The multiple correlation analysis indicated that only

16 per cent of the variance in self-concept was predicted from family background variables, while 29.9 per cent was predicted from parent child-rearing practices; while variables from both sets combined predicted 34.2 per cent of the variance. Of the total predicted variance, 18 per cent was uniquely predicted by the two family background variables; 63 per cent was uniquely related to the four parent child-rearing variables, and 19 per cent was common to both sets. The fact that a major portion of the predicted variance of self-concept (72 per cent) was associated with child-rearing practices is viewed as strong evidence that parental attitudes and child-rearing practices play a major role in ego development.

Health Index. The association of health problems with parental loveing-rejecting was highly significant, suggesting that parental rejection contributes to the child's poor health. In addition, this measure was correlated with family background variables in such a manner as to indicate that low economic level and low parental education were contributing factors to poor physical health of the child.

The multiple correlation analysis indicated that 21.6 per cent of the variance of the health index was predicted by the two family background variables and 36 per cent by the four parental child-rearing attitude variables. The six variables together predicted 40.2 per cent of the total variance, 25 per cent was uniquely associated with family background factors; 59 per cent was uniquely associated with parent child-rearing practices; and 16 per cent was shared in common by both sets of variables.

Teacher Ratings of Personality Traits. The two personality trait patterns obtained by teacher ratings had highly significant correlations across measures of family background and parent child-rearing attitudes.

In the multiple correlation analysis, approximately equal portions of variance of Positive Trait Pattern A (TR) (12.9 per cent) and Positive Trait Pattern B (TR) (12.5 per cent) were predicted by the two measures of family background. A slightly larger portion of the variance of Pattern B (19.9 per cent), than of Pattern A (13.7 per cent), was predicted by the measures of parent attitudes. Of the predicted variance of Pattern A (19.9 per cent) and Pattern B (23.4 per cent) associated with the sets of predictor variables, 36 and 18 per cent, respectively, were uniquely related to family background factors, while 41 and 53 per cent, respectively, were uniquely predicted by parent child-rearing practices. A larger proportion of the predicted variance of these two characteristics, Patterns A and B, than any of three other characteristics of the child examined in this manner, was in common with the measures at both levels, suggesting that such behaviors may have antecedents at both levels, but that the major influence is through parental attitudes and practices.

Class Play Traits. In general, the scores developed from the Class Play were suitable measures of the postulated behaviors. However, the four items selected as Negative Trait Pattern A (Peer Nom.) were among the least predictive of the 21 Class Play items available. On the other hand, the items selected as measures of Negative Trait Pattern B (Peer Nom.) were highly associated with the other variables.

Peer Acceptance-Rejection

Significant association with LD was found for the variables in each of the other sets, and 68 per cent of the variance in LD was predicted by the combination of all other variables. The evidence that the Set representing child characteristics (Set 300) predicted the major portion (60 per cent) of the LD variance supports the expectation that peer choice is primarily responsive to traits of the individual that represent his stimulus value in peer interaction.

From the multiple partial correlations in Table 119 it was estimated that: (1) about 9 per cent of the total variance in LD was uniquely predicted by the family background variables; (2) 11 per cent of the total variance was predicted uniquely by parent child-rearing practices; (3) 45 per cent was uniquely predicted by characteristics of the child; (4) 21 per cent of the total was associated with the composite measures of family background and parent child-rearing practices, directly, with the influence of the characteristics of the child partialed out; (5) 53 per cent of the total variance was associated directly with the composite measures of family background and characteristics of the child, when the influence of parental attitudes was partialed out; (6) 59 per cent of the total variance was directly related to the composite measures of parental attitudes and characteristics of the child, when the influence of family background was removed.

The decrease in the magnitude of variance predicted by family background variables (Set 100) from 23 to 9 per cent with the removal of the common variance associated with parental attitudes (Set 200) and characteristics of the child (Set 300) demonstrated relationships which suggest strongly that family background influence is reflected, in part at least, by variables in the parent attitude and child characteristic sets.

Similarly, the variance in LD associated with parental attitudes (Set 200) is reduced from 32 to 13 per cent when the variance shared by Set 200 with Child Characteristics (Set 300) in removed by partial correlation. These results show the extent to which the stimulus characteristics of the child depend on parental attitudes and child-rearing practices.

CONCLUSIONS

The relations of family background and parental attitudes in child rearing to the personality development and peer acceptance-rejection of the child constituted the problem of this study. A network of relationships among these four sets of variables was hypothesized and strategically selected variables were employed to examine pivotal linkages. Multivariate methods were used in order to achieve control through statistical analysis. The results supported the theoretical formulations as significant relationships were found throughout the hypothetical network. The significant linkages thus established are interpreted as illuminating some of the major factors which influence personality development and peer acceptance and rejection. Although correlational evidence alone is usually inadequate to support causal inferences, the sequential relations of the sets of variables examined and the developmental frame of reference involved are believed to justify the following conclusions.

Family Background

Social Level. This family background factor is associated with the degree of enlightenment displayed in child-rearing attitudes and practices, with the extent to which the child develops psychologically favorable attributes, and with the child's capacity for effective socialization which affects his acceptance or rejection by peers.

Family Tension. Factors contributing to the Family Tension index are positively related to disruption and dissent in the family, with psychologically harmful and conflicting child-rearing attitudes and practices of parents, with hostile and negative child personality trait patterns, and with peer rejection.

Parent Child-Rearing Practices and Attitudes

Loving-Rejecting. In addition to linkages with family background factors, discussed above, the degree of love or rejection projected by parents has a marked influence on the cognitive, physical, ego, and social development of the child.

Casual-Demanding. This dimension demonstrated significant influence on personality development and peer acceptance-rejection in a manner analogous to that of Loving-Rejecting, except that fewer significant linkages with factors in the family background were manifested.

Overt Concern. The scales for Overt Concern used in this study which were adapted from the work of Roe and Siegelman, as were the preceding two, appear to have measured something somewhat different for different subjects. There was no area of agreement between scores based on parents' self-reports and scores based on the child's perception of that parent; the number of significant correlations with other variables in the network, although in the hypothesized direction were only slightly better than chance expectancy.

Parental Consistency. These results confirm that parental disagreement in child-rearing attitudes and practices has a pervasive influence on the child's personality development, particularly that of ego development. The highly significant associations of parental disagreement with measures of tension in the family and low social level are noteworthy.

Characteristics of the Child

Intelligence. The major portion of the predicted variance of IQ was associated with social level; only a moderate association was found with parental child-rearing attitudes and practices.

Ego Development. This factor, measured by two instruments, was most significantly influenced by parental attitudes of loving-rejecting. Low self-concept was associated with parental rejection. An appreciable association was found between the child's self-concept and teachers' ratings based on observed behaviors and also with peer acceptance-rejection.

Personality Traits. Personality trait patterns based on teacher ratings were almost equally influenced by family background measures and by measures of parental child-rearing attitudes and practices. Trait Pattern A (TR), socially effective behavior, and Pattern B (TR), superego strength, were substantially correlated with the other variables in the matrix, and Pattern A (TR) was one of the best single predicators of peer acceptance-rejection, LD, (r = .57).

Of the two scores developed from the Class Play, only one, 352, Negative Trait Pattern B (Peer Nom.), correlated significantly with most of the variables in the matrix. On the other hand, as mentioned above, the four items selected as Negative Trait Pattern A (Peer Nom.) were among the least predictive of the 21 Class Play items available.

Peer Acceptance-Rejection. The stimulus value of the child, reflected in personality traits, health, intelligence, and self-concept, is the principal determiner of peer acceptance-rejection. Accepted children tend to be outgoing, friendly, healthy, and bright, while those who are rejected by peers tend to be hostile, antagonizing, poor in health, and dull.

CHAPTER VII.

SUMMARY AND CONCLUSIONS

VII. SUMMARY AND CONCLUSIONS

This report has presented the principal results of a five-year research program which analyzed many of the correlates of peer acceptance-rejection in a series of studies involving 37913 school children in 19 Texas and 2 Minnesota cities, in the age-range of 9 to 12, and demonstrated the pivotal importance of this variable in sociolization and personality development. Peer acceptance-rejection, previously found to be associated with young adult adjustment in military studies, was significantly related to criteria of early delinquency and early school dropout in the present study within the short span of time available for followup. In addition to adding substantial weight to the pioneering work of Roff whose earlier followup studies were the impetus for the present research, these results, reported in Chapter V, emphasize the importance of obtaining greater understanding of the factors associated with acceptance and rejection by peers.

The measurement of acceptance-rejection was accomplished by means of peer choice nominations of liked-most and liked-least classmates of the same sex and by teacher rating, which provided five measures, designated LM (Like Most), LL (Like Least), LD (LM-LL), TR (Teacher Rating), and DT (2LD+TR). All scores were computed from summed raw data and converted to z-scores by same-sex class-group (although TR's were computed for entire classes), with a mean of 5 and a standard deviation of 1. The sample, measurement procedures, and forms, and organization of the report are described in Chapter II.

Chapter III presented a series of methodological studies. These refer to reliability and stability, over four years in some cases, of peer status scores; agreement between teachers and children in relation to peer scores; characteristics of teachers related to such agreement; intercorrelations among the five peer status scores within and across years; and the use of matrix methods in obtaining measures of peer status. Peer acceptance-rejection was shown to be a complex measure capable of representation as a bi-polar variable (LD, TR, DT are bi-polar in design), but having substantial independence in measures based on positive (LM) and negative (LL) nominations, which, though correlated about .50, nevertheless have subtle differences in their correlates. The reliability and stability of the peer scores was substantial and justified their use in the many analyses reported. Their interactions with age, sex, ethnic group and race accounted for variations in reliability and stability measures that are of considerable interest. The analysis of teacher characteristics in relation to accuracy of rating in relation to peer choice was, on the whole, fruitless. The major discriminating factors found suggested that teachers who took recent professional courses were more accurate.

A major methodological contribution was the study relating the peer status of chooser and chosen in the peer choice procedure. Using large samples from both states, highly reliable and accurately replicated results were obtained which indicated that the choice status of chooser and chosen are eseentially unrelated, the correlations for positive choices being near zero and those for negative choices not exceeding .19. These results are highly relevant to research in sociometry and interpersonal perception. Despite the claims of numerous writers that matrix methods are necessary in computing scores, in order to represent the status of choosers in computing the status of individuals chosen, little empirical work has appeared in support of their arguments. The results of this study, which are elegant in structure and agreement between the two state samples, remove any doubts that such methods are unfounded.

Antecedent correlates of peer acceptance-rejection were investigated in a series of studies in Chapter IV. Here, the peer scores were shown to be significantly correlated with IQ, SES, birth order, school grades, a number of indices of family pathology, relating to poverty, ignorance, indigency, immorality, and family disorganization. In addition, low peer status results from ethnic prejudice, as shown in a study of children with Spanish surnames. It was not feasible to repeat this with Negro children. However, in a study of Negro children in segregated schools, it was found that within an all-Negro sample, peer relations tend to be ordered essentially as they are in the mostly-White school population.

The influence of family background as a factor influencing peer acceptance-rejection was clearly implicated by the studies of siblings and twins, also reported in Chapter IV. Using intraclass correlation to assess resemblance within family groups and control groups of unrelated children, a continuum of increasing resemblance was found, ranging from R of zero for controls, to .38 for siblings, to .80 for identical twins. Within sibling and fraternal twin groups, like-sex members were more highly similar in peer scores than unlike-sex members.

The studies in Chapter IV demonstrate that peer status is not primarily a reflection of the unique attractiveness of an individual, qua individual. On the contrary, it is very much a function of lawful investiture of the individual with degrees of attractiveness and unattractiveness related to family background, including education of parents and socioeconomic status, parental attitudes in child rearing, family organization, birth order, ethnic group membership, race, and numerous other factors, and their effects on the personality and behavior of the child. The deterministic impact of these relationships is very striking, but the separate results were obtained in different studies and were not evaluated in a multivariate frame of reference in which the unique proportions of variance accounted for by the various background factors could be determined. Such an analysis was undertaken in the dissertation study of Samuel H. Cox, reported in Chapter VI.

Chapter V was devoted to the two followup studies, of early delinquency in Minnesota and of early school dropout in Texas. The criterion measures obtained in both studies were obtained within the five-year term of the project and truly emphasize the word early. Nevertheless, peer status did successfully and significantly discriminate early delinquents from non-delinquents and early school dropouts from non-dropouts. The delinquency study further provided a basis for the post hoc formulation of a two-factor conception of the role of peer status in delinquency. In this formulation, low peer status is highly associated with delinquency at high and middle SES levels, where delinquent behavior is deviant, but high peer status is associated with delinquency at the low SES levels, at which behavior regarded by society as delinquent is normal. The followup of school dropouts demonstrated that prediction of dropout on the basis of low peer status is possible, even when IQ is controlled. Both of these studies were highly suggestive of major explanatory principles and are believed to warrant further followup of the sample and more extensive analysis.

The 100 family study by Cox was an effort to incorporate a broad conception of the problem into a single multivariate analysis, linking selected variables from four frames of reference considered essential to the explanation of the origins of peer acceptance-rejection, as depicted in Chapter IV. This study included 29 final variables, derived from an extensive battery. They were classified in four sets, as follows: Set 100, measures of family background, consisting of family income and parents educational levels, and a measure of family tension; Set 200, measures of parental child-rearing attitudes, Loving-Rejecting, Casual-Demanding, and Overt Concern, represented six ways for self-rating of father and of mother, ratings of father and of mother by the child, consensus of the four, and parental disagreement; Set 300, measures of child characteristics, including IQ, health, self-concept, an outgoing personality trait pattern, and a hostile personality trait pattern; and Set 400, peer acceptance-rejection, represented by LD. Analysis by multiple correlation and multiple partial correlation made it possible to estimate the linkages among the four sets of variables and to compute the portions of variance in LD attributable to each of the others.

In two subsamples of the 100 families participating, 62 and 68 per cent, respectively, of the variance in LD was accounted for by the three preceding sets. The greatest proportion of this variance was accounted for by the variables in Set 300, Child Characteristics. However, variables in Sets 100 and 200 account for substantial variance in the variables of Set 300, different patterns of relationship being observed for different child characteristics, as shown in Tables 117 to 119. In general the network of relationships found suggests that (1) high peer status (acceptance) is a function of outgoing personality pattern, good health, high

IQ, and self-esteem of the individual child, which are in turn (2) related to loving and casual attitudes of both parents, perceived equally by both parents and the child and also (3) to high SES and absence of family tension. The patterns associated with peer rejection are the polar opposites of these. Although correlation analysis *per se* is not a sufficient basis for the inference of causal relations, the agreement of the results reported with many studies in the literature related to various segments of the total network investigated here, and the temporal sequence and developmental schema represented by the four sets of variables included, add much **weight** to the desirability of a causal interpretation, which follows.

From the viewpoint of child development, it appears that parents of higher SES, who raise their children in more abundant and enlightened home environments, free from tension due to deprivation, illness, or interpersonal conflict, are more likely to acquire, value, and project loving and casual attitudes toward their children. Such comfortable, enlightened, and ego-satisfying background tends to produce healthy, bright, and outgoing children, with high self-esteem, who accept and in turn are accepted by peers. In relation to subsequent life experience, such children are more likely to approach maturity without undue strain and to adjust well in school and society. At the opposite pole, poverty, discontent, ignorance and frsutration at the parental level tend to produce rejecting and demanding parents, who in turn beget and raise children poor in health, intelligence, and self-esteem, who project attitudes of hostility to others and in turn are rejected. Such children are vulnerable to the same problems that defeated their parents and grow up with strong tendencies to develop into maladjusted youth and adults and perpetuate a vicious cycle.

The major modes of intervention that appear indicated in the light of these results are parent education and the general eradication of poverty and its associated social ills. Peer rejection, which has been shown to be a strong precursor of later severe maladjustment, is not an isolated event randomly distributed among the child population. The results reported here tie it to social forces of considerable generality and of major significance. It appears evident that child-oriented programs of enriched educational offering and group activities, which enjoy current popularity among agencies concerned with underprivileged, disadvantaged, maladjusted, and delinquent youth, are focused on symptoms rather than causes. Such approaches may have short term value as palliative measures, but the indications of the present research suggest that their principal value may be only to buy time until more fundamental measures, designed to attack the root sources of the problems, can be put into effective operation.

Prescription of such measures is beyond the scope of this report and perhaps beyond the capability of its authors. Indeed, there are many loose ends in the research data, which have been mentioned throughout the report, which require further study. These include further analysis of the intriquing birth order results, more extensive investigation of the ethnic and racial minorities in the samples, and extension of the followup studies in relation to delinquency and school dropout, as well as other significant criteria. Replication and extension of the 100 family study, perhaps including families with more than one child in the sample is another high priority.

No research is ever complete. However, it is hoped that in this report there will be found a synthesis of principles that have appeared segmentally in the literature and a marshalling of evidence concerning the antecedents and consequences of peer acceptance-rejection that may stimulate both research and administrative interest in this area of human behavior.

CHAPTER VIII.

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VIII REFERENCES

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